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The Journal of the Fire Protection Profession

JUNE 26, 1929

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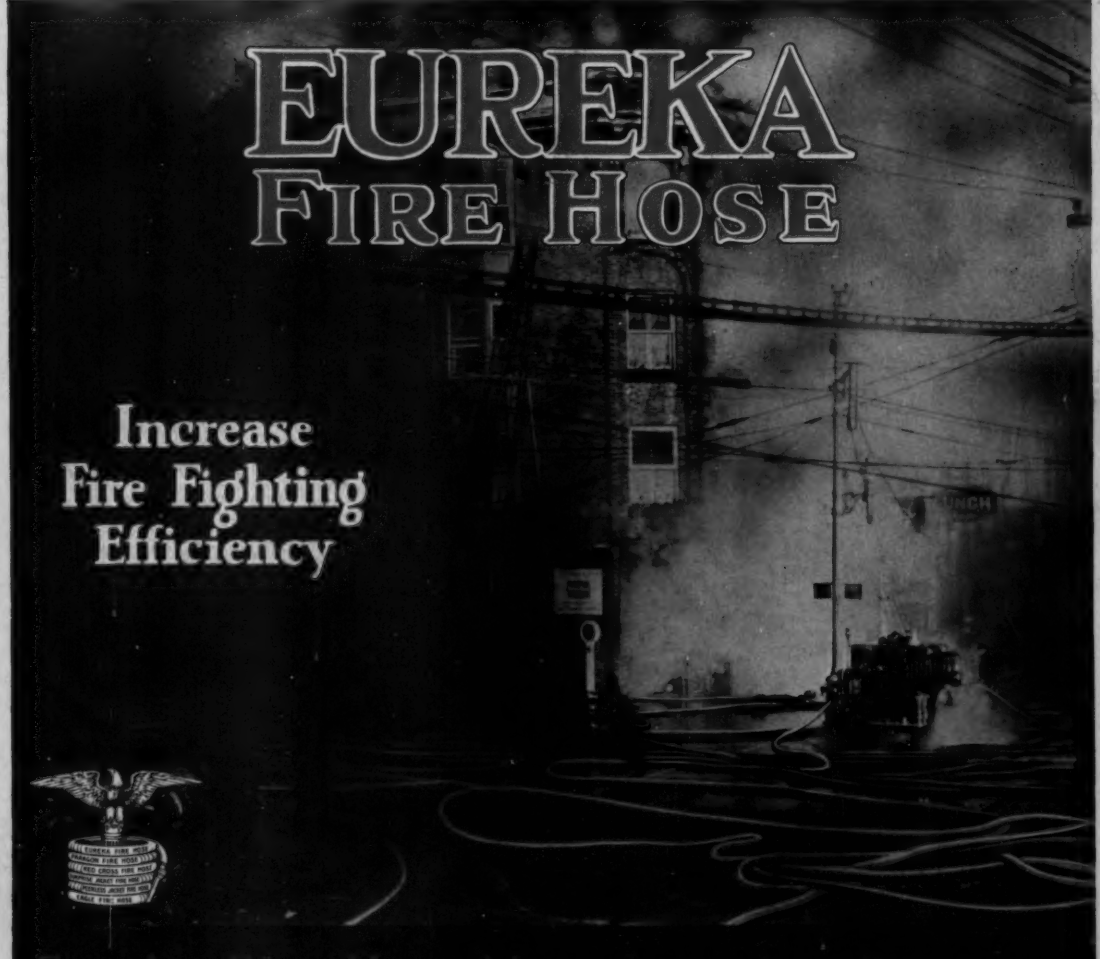
Efficiency



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Pardonable

IT is usually the commendation we don't expect that pleases us most.

¶ And, we believe our readers will pardon our pride—our being all puffed up about the letter below from our good friend, Chief George Carpeneto, of Bellefonte, Pa.

Here it is:

"The boys have been reading my copy of FIRE ENGINEERING to death, so they have decided to subscribe for themselves. They certainly read it from cover to cover, for it is the best Fire Magazine in the country.

"I like it because it is very instructive. A volunteer fireman can get a lot of good pointers from it."

¶ Mighty fine of you, Chief Carpeneto, and we hope the boys as well as yourself will continue to find it interesting and useful.

The Publishers

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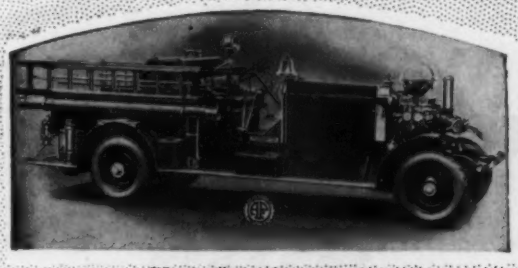

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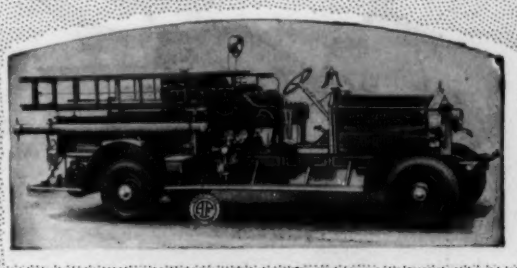

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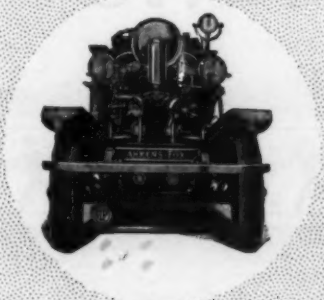

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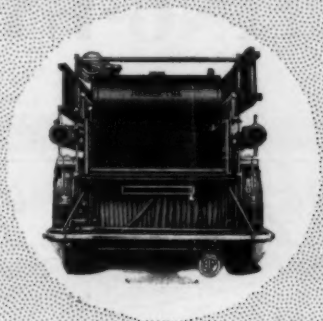

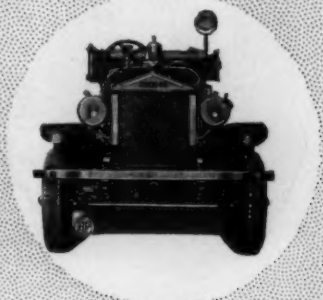

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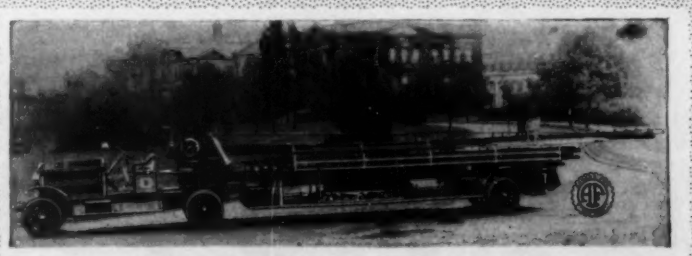

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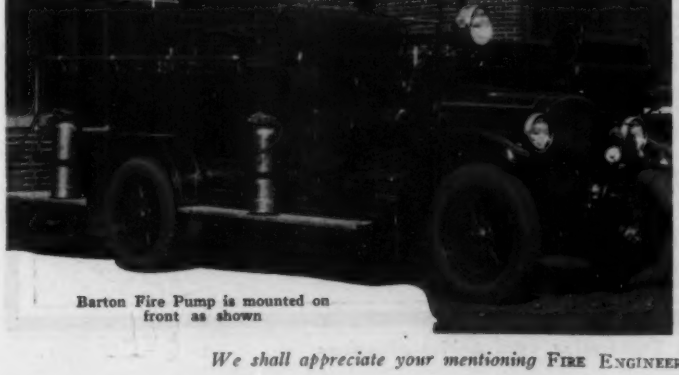
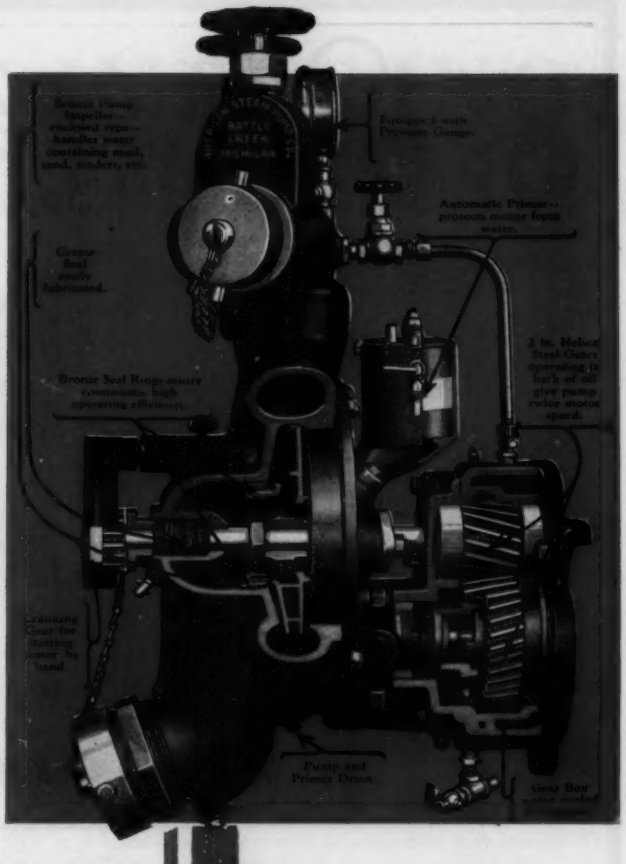
BARTON
FIRE PUMPS



Barton Fire Pump is mounted on front as shown



Study for a moment the Barton Pump as revealed by the sectional view above. Note that here is a centrifugal pump, handling water from either hydrant pressure or suction; therefore adaptable for both city and rural protection. Note the high-grade features such as water cooled gear box, automatic primer and bronze seal rings.

Barton Pumps are offered in sizes to handle up to 375 gallons per minute at pressures as high as 200 pounds. They can be used with practically all types of fire apparatus, mounting on front as shown below with power taken from motor crankshaft.

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New Haven, Connecticut	Lakewood, Ohio
Ft. Lauderdale, Florida	Allentown, Pennsylvania
Atlanta, Georgia	Providence, Rhode Island
Detroit, Michigan	Woonsocket, Rhode Island
Duluth, Minnesota	Dallas, Texas

We have been able to concentrate largely on one standard model without variation, whereas before the variations in fire alarm boxes were numerous and expensive. Consequently we have realized economies and are passing them along to you.

A reduction of 10% in the price of the 1929 Peerless Box (street model only) goes into effect immediately. This applies only when the box is ordered in its standard form without any variation whatever. Any special features will be included if desired, but at an additional cost based upon the nature of the change.

This covers the box with the 18 improvements, without any change in the high quality of the workmanship and materials.

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The Journal of the Fire Protection Profession

VOLUME LXXXII JUNE 26, 1929 NUMBER 13

Court Awards Chief Damages for Injuries

Other Important Decisions of Higher Courts Relating to Fire Departments and Fire Fighting—Recent Pronouncements of Interest

By LEO T. PARKER, Attorney-at-Law, Cincinnati, Ohio

THE law is well established that a municipal fire official who, during the day or night, makes a personal investigation to reduce fire hazard, is deemed to be acting within the scope of his employment and is, therefore, entitled to damages for injuries resulting from another's negligence.

For instance, in Smith vs. Twin State Gas & Electric Company, 144 Atl. 783, the janitor of an apartment building noticed the odor of escaping gas and called a fire chief who was passing the building. The chief went into the basement of the building to make an investigation and an explosion of gas occurred, seriously injuring him. He filed suit for damages against the gas company and proved that the leakage resulted from negligence of its employees. The Court promptly held the gas company liable, saying:

"Regardless of any duty, prescribed or otherwise, to investigate, as a fire chief in a city of the State, he entered the basement of the building to ascertain if gas was escaping into it. It was an act in the course of his service, such as might reasonably and naturally be expected under the conditions which existed . . . His prescribed duties were not necessarily the full measure of his service, which, from the nature of his office and in the absence of defined limitation, was inclusive of some conduct of discretionary authority . . . A fire chief's service includes all legal conduct deemed by him calculated to promote the public safety in respect to the fire hazard. Exercise of such authority is within the scope of service and within his official power, although failure to exercise it may not be a breach of duty. The conduct was a part of the service and more than incidental to it . . . It is reasonable to say that it is within the implied authority of the janitor of a building, having the duties of care and protection, to admit a fire chief into it to make such an investigation as was here made."

City Liable for Paying Assigned Wages to Employee

In many instances, municipal fire department employees assign their wages to loan companies as security for payment of loans. Therefore, the recent case of City of Denver vs. Jones, 274 Pac. 924, imparts unusually valuable information.

The facts are that a fireman assigned his wages to a debtor who notified the city, by garnishment proceedings, of his claim to the wages. The city ignored the notification and paid the salary to the fireman. The debtor sued the city to recover the amount of the debt. It is interesting to observe that the Court held the city liable, saying:

"When a party has entered into a contract or arrangement, by the ordinary and legitimate and natural operation of which he will acquire property, his existing right thereunder is not a mere naked hope; it is a possibility of acquiring property, coupled with a legal interest, in the contract . . . Here the money garnished was paid out by the city after service of garnishment summons. Such payment was made at the risk of the city, because, after the services of garnishment process, the money was in custodia legis, and the garnishee thereafter became a mere stakeholder of the same, retaining possession thereof until the determination of the garnishment proceedings."

On the other hand, it is important to know that a city would not be liable for failure to retain a fireman's wages, upon notification by the employee's creditor to do so, providing the assignment of the salary was made by the fireman before he obtained the employment.

In other words, no person may make a valid assignment of a mere expectancy, such as wages he may receive if he secures an expected position.

Under the settled law that a mere expectancy or possibility is not assignable, an assignment of future wages is invalid where there is no contract of employment in existence at the time, and the wages are those to be earned under engagements which are to be entered into subsequently. Such a transfer is an attempt to assign that which has no existence either actually or potentially, there being no foundation or contract on which an indebtedness may arise.

Collision with Fire Department Truck

In the recent case of Hoffman vs. People's Motorbus Company, of St. Louis, 288 N. W. 948, a litigation involved a collision between a motor bus and a fire department truck in a congested part of a city. The motor bus company was held liable for $1,500 damages, payable to the driver of the fire truck, as a result of injuries sustained. This judgment was awarded the fireman in view of the testimony that the motor coach was traveling in excess of the legal speed limit of 10 miles an hour in the congested district at the time of collision.

It is important to know that testimony regarding the relative position of motor vehicles after a collision may be an important factor in influencing a Court in deciding who is liable for the resultant damages.

For instance, in Mitchell vs. Atkins, 135 S. E. 28, the

THE subjects treated in this article are: "Chief Allowed Damages for Injuries Caused by Exploding Gas"; "City Liable for Paying Assigned Wages of Employee"; "Collision with Fire Department Truck"; "Fire Insurance Agent Cannot Without Consent of Company Issue Policy to Himself"; "Ordinance Valid Which Restricts Storing of Automobiles in Apartment Buildings" and "Modern Fire Extinguishment Equipment Lowers Risk."

lower Court held the owner of a motor coach liable for $10,000 damages. The higher Court affirmed the verdict after reviewing the testimony regarding the position of the vehicles after the accident, and said:

"Their relative positions on the roadside, after the collision, was evidence as to the manner in which the vehicles were being operated immediately before the collision. Plaintiff alleged that the driver of the bus was negligent in that he was operating the bus on the left side of the highway and at an excessive rate of speed, and that this negligence was the proximate cause of the injury. There was evidence to sustain this allegation."

Fire Insurance Agent Cannot Without Consent of Company Issue Policy to Himself

Frequently the legal question is presented whether an insurance agent is legally entitled to issue to himself an insurance policy without the consent of the insurance company. It is important to know that while an insurance company is liable to other persons on a policy issued or promised by its agent, yet this is not true with respect to an insurance agent.

For illustration, in Clifford vs. Firemen's Ins. Co., 224 N. W. 891, it was disclosed that a fireman named Clifford acted as sub-agent in a prescribed locality for the authorized agent of the Firemen's Insurance Company.

Evidence was presented showing that on January 22, the fireman requested the agent to insure his house. The policy was written at noon on January 25, and that evening the house burned.

The policy was mailed to the company which accepted and cashed the check sent in payment for the premium, but later returned the premium and refused to pay the loss on the contention that an agent has no right to insure his own property without consent of the company.

Suit was filed against the insurance company on the grounds that when it accepted the premium, a valid contract of insurance was completed. However, the Court held the insurance company not liable on the policy, saying:

"A policy of insurance, issued by an agent of the insurance company to himself, without the knowledge or consent of the company is void . . . and, where he writes a policy on his own property, it must be approved by the company before it constitutes a contract . . . as such agent is acting for himself, and cannot be considered the agent of the insurance company . . . Hence the policy was of no validity until submitted to and approved by the company. This was never done. It is true, a copy of the policy was sent to the company in the daily report on business; but there is not a word of testimony showing the company approved the policy—in fact the testimony shows the company ignored it and did not ratify it. . . . Where business is systematized and passes through separate channels it can not be expected that one small item will attract attention immediately. . . . The testimony shows that, when word came from the claim department of defendant (insurance company), the matter was referred to other departments, and eventually to the attention of this assistant chief accountant. Then the premium was returned."

Ordinance Valid Which Restricts Storing Automobiles in Apartment Buildings

It is important to know that a city ordinance always is valid and enforceable which is primarily intended and adopted to prevent conflagrations. Moreover, this is true although the ordinance is intended to prevent dangerous uses of a building constructed under a permit issued by the municipality previous to enactment of the restrictive ordinance.

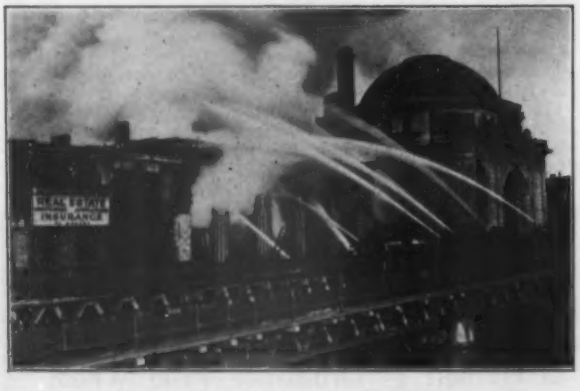
For example, in Bellerive Inv. Company vs. Kansas City, 13 S. W. (2nd) 628, the litigation involved the validity of a city ordinance as follows:

"No person, firm, or corporation, shall occupy, use, operate, manage or let any living or sleeping quarters over any room, place or establishment in which more than three automobiles shall be kept, stored, parked, placed or sheltered at any one time."

The owner of a large apartment building, and the proprietors of several smaller ones, filed suit against the municipal corporation, the chief of the fire department and the chief inspector of the fire prevention division of the fire department to prevent enforcement of the ordinance on the contention that the buildings were erected with garages in the basement in accordance with a permit issued by the municipality previous to the time the ordinance was passed. The apartment owners, also, argued that the ordinance was invalid because it violated the United States Constitution and took private property without just compensation.

However, the Court held the law valid, stating the following important law:

"Accumulation of vapor or gas, in compartments wherein such automobiles are stored creates a dangerous and hazardous condition by reason of the fact that the same may be ignited upon coming in contact with a flame or spark of any character. . . . The question which is presented for our consideration and decision is whether the ordinance in question is fairly referable to the police power of the municipality, and whether the expressed requirements or regulations of the ordinance have a substantial and rational relation to the health, safety, peace, comfort and general welfare of the inhabitants of the municipality. . . . Although one owns property he may not do with it as he pleases, any more than he may act in accordance with his personal desire. As the interest of society justifies restraints upon individual conduct, so also does it justify restraints upon the use to which property may be devoted. . . . The safety of life and property as against the ravages of fire has always been a live question in municipalities. The city government has to deal with the question not from the standpoint of the individual owner of a particular property, but from the standpoint of the general welfare of the city and its citizenship. Ordinarily, the citizen has the right to use that which is his own, in such a manner as he pleases, but if the use thereof seriously affects the general public, society and the laws thereof demand a surrender of a part of the individual rights for the general welfare of the public, for such is the basis of all government. . . . It is undisputedly a matter of general and common knowledge that the modern mammoth apartment building . . . ofttimes houses and accommodates with living and sleeping quarters a number of persons which equals or exceeds the entire population of many, if not most, of the towns and villages of the State. Under such conditions and circumstances, a fire or conflagration in a single such building or structure would immediately jeopardize as many human lives as are contained within the confines of one of our rural villages and towns. It follows, therefore, that a police regulation or ordinance which may be wholly unreasonable and invalid, as applied to a rural community, may be entirely reasonable and valid, as applied to a city of the size and population of St. Louis or Kansas City."



Noted New York Theatre Destroyed by Fire

The Thalia Theatre, an important factor in the theatrical life of New York City several decades ago, was destroyed by fire in the presence of a large Bowery assemblage. When the theatre section was moved from the Bowery, the Thalia Theatre was used to present plays in foreign languages and, before the blaze, was used for plays in Chinese. The city's "Chinatown" is a short distance from this spot.

Modern Extinguishment Equipment Lowers Risk

Prevention of fires may be successively effected by imparting information to property owners of the reduced risk of financial loss resulting from installation of modern fire extinguishment equipment. This rule applies particularly to bailees.

A bailee is any dealer who by request of a customer, holds merchandise in storage; or a purchaser who refuses to pay for unsatisfactory goods and notifies the manufacturer to give instructions for disposal; or a common carrier who stores a shipment for a consignee; or a public warehouseman; or any other firm or person who expressly or impliedly agrees to safekeep another's property.

Ft. Lee, N. J., to Have New Fire House—Contracts have been let for the construction of a new fire house in Fort Lee, N. J., to cost $10,000.

Want to Quarter Visitors in Fire Houses—A request has been made to the Director of Public Safety that the nine fire stations in Wilmington, Del., serve as headquarters for members of the Volunteer Firemen's Association of Wilmington, New Jersey and Maryland at the two-day convention that will begin July 11.

Beaumont, Tex., Favors Fire Alarm—It is believed that the installation of a fire alarm system in Beaumont, Tex., would be the first improvement to be considered under a bond issue plan whereby $200,000 was voted for the fire department. Chief S. D. O'Connor pointed out that some of the fire alarm equipment had been in service for thirty years.

Fig. 1—A Warehouse Fire Which Kept New York Firemen Busy for Two Days.

The fire in the Manufacturers' Transit Company warehouse on Jane Street, a few years ago, was not fully extinguished until streams had been operated for nearly two days. This fire started from ignition of magnesium powder by friction of packing cases dragged over it. Heavy rolls of newspaper, soaked by water, expanded and forced one wall away from floor supports.

Fighting the Warehouse Fire.

Inaccessibility, Large Floor Areas and Congested Stock all Contribute toward Making the Task a Hard One for the Department.

FIRES in storage warehouses, particularly of other than modern construction, and where they are not equipped with the latest fire protection facilities often result in complete destruction of the building.

The difficulties in handling fires in such structures are many. Warehouses may contain almost any type of material from highly inflammable chemicals to non-combustible stocks such as machinery. To give any specific method of fighting the average warehouse fire would be impossible, unless the nature of contents were fully understood.

But the structures themselves do not vary widely, and some of the main problems in fire fighting are common to all.

Warehouses may be of converted type, that is, old commercial buildings which have served their usefulness in such capacity changed over for storage purposes; or they may be of brick and timber construction, built expressly for the purpose. The latest warehouses are almost invariably of steel and concrete construction, with modern fire protection facilities. These naturally do not constitute as severe a hazard as the first two mentioned. In the following suggested methods of handling warehouse fires, the first types of buildings only will be considered.

Warehouses are constructed as a rule with large opened areas which are filled with stock nearly reaching the ceiling. Thus fire has an opportunity of spreading over a large area quickly, and the fire streams, on the other hand, are limited in their range due to the comparatively small clearance between tops of piles of merchandise and the ceiling.

The great weight of merchandise on the various floors also adds to the trouble of the department. Weakening of floor beams by fire, or the overloading of the floors by absorption of water by the materials stored thereon, may mean the early collapse of floors or walls.

In addition, such materials as newsprint paper in rolls, baled hay, wool, cotton, rags, and similar materials expand when wetted, and may exert sufficient pressure when wedged in tightly on a floor to displace walls and thus permit floors to fall through. Such may happen even in well built warehouse of modern type.

Iron shutters, locked on the inside, are found on most warehouses. In addition, many warehouses have comparatively few openings, such as windows and doors, through which the department may operate. This slows up operations and reduces the effectiveness of the department appreciably.

Another factor which tends to slow down the operations of the department is the usual congestion of traffic in the neighborhood of warehouses. These buildings are commonly found in the older industrial sections of cities, where heavy trucking is done. This factor must be taken into consideration in calling apparatus and in the operations of the department at such fires.

It is impossible to definitely state from what cause most warehouse fires originate, as well as at what points fires start. Defective electric wiring, or disturbed wiring due to shifting heavy loads around floors, are responsible for some fires. Defective electrical cables in elevator shafts are also charged with starting a number of ware-

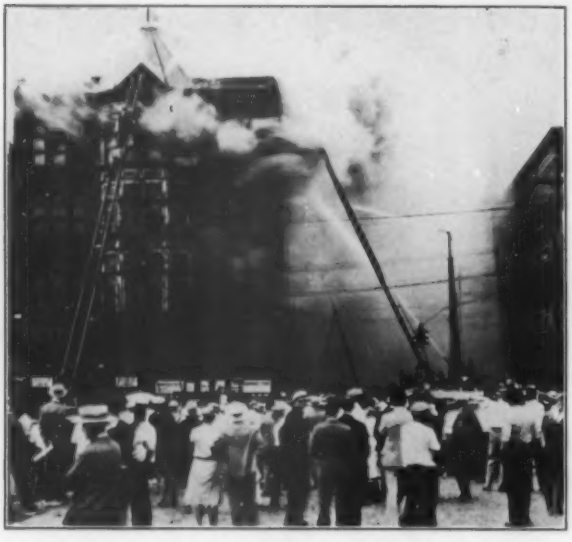


Fig. 2—The Converted Warehouse is Always a Trouble Maker.

This structure at Roanoke, Va., defied all efforts of the fire department, and finally collapsed. The building was filled with furniture.

house fires. The ignition of inflammable chemicals through friction of packing cases and other materials on floors is definitely credited with a number of warehouse fires.

In any case, once fire starts it usually involves the entire floor on which it originates. From this floor it works upward through hoist ways, elevator shafts or other ducts through which fire may rise. Fire reaching upper floors by exterior exposure is rare.

Upon the arrival of the department, unless the fire has been burning for a long time concealed, or unless the various floors are stocked with highly inflammable materials, only one floor is apt to be involved.

Procedure in Fighting Fire.

If the building is equipped with sprinkler system, the first company arriving immediately connects to the sprinkler system. If building has also standpipe equipment, the second company connects to standpipe equipment if fire is above third floor (some departments require the second company to connect to standpipe only if fire is on the fifth floor or above). Second company would then take lines of hose up stairway to floor below fire, and connect to standpipe and stretch up to fire floor.

As a general rule, large streams are needed at warehouse fires, particularly where they have involved an entire floor. If building is of old type construction, there will be extreme danger in having men enter floors below if fire has been burning for some time, due to the weakening and probably collapse of floors. In such a case, men operate only from ladders or from window sills.

Ventilation should be accomplished immediately upon arriving at warehouse fire.

Due to the closed in nature of the fire, there is a great likelihood of back draught occuring. Fire burning in a limited supply of air generates inflammable gases either through partial combustion or distillation of wood and similar materials and when the building is opened up for fire fighting operations explosions (back draught) may result.

For this reason thorough ventilation is required—opening up the roof of the building first, if possible. In opening iron shutters, men should stand to one side so that in the event of back draught they will not be injured by shutters being blown outward. The same applies to doors and windows.

Considerable difficulty may be encountered in opening doors, particularly at night. They are usually securely locked and require the maximum efforts of the department to open them.

Occasionally at warehouse fires it is good practice to breach a blind wall in order to get streams at the seat of the fire. This is only done when other means will not serve, as it takes considerable time to breach a wall the thickness of those commonly found in storage warehouses.

As noted above, large streams are usually necessary in warehouse fires, particularly where they have involved one or more floors. For high floors, water tower streams or ladder pipe streams are most effective. For floors from the fourth on down, street pipe or deck guns may be employed, although the limit of range for full effectiveness of deck guns and street streams is the third floor.

After bringing the fire under control by using heavy streams on it, the rest of the work is comparatively simple.

In the operations of fire fighting, while the fire is being fought, particular care must be taken to protect floors above and below from fire extending on to them.

(*Continued on page* 555)

Fig. 3—Limited Openings Handicapped the Department

This view of packing plant warehouse at Kansas City, Mo., shows clearly the typical type of construction employed in the older warehouses. Note the distance between windows, and the limited number of them. It's hard to do effective work from the street under these conditions.

THE ROUND TABLE

For Practical Discussion of Current Fire Department and Fire Management Problems

HEADS of the volunteer fire departments are faced with the vexing problem of how to inform the members of the location of a fire as soon as an alarm has been reported, and yet how to prevent the general public from obtaining the information. As soon as the average resident hears the siren or whistle, he runs to the telephone to learn from the central exchange where the fire is located, and then he rushes to the fire in his automobile.

The problem in full that is discussed in this issue appears in the box on this page. In the box on the following page is the problem that will be treated in the next issue. Should you have some comments that you would like to make on the coming question, or if you have one that you would like treated in this department, write to the "Round Table Editor," FIRE ENGINEERING, 225 W. 34th St., New York, N. Y.

Here Is the Problem

If you employ a fire siren, whistle or diaphone for calling out firemen, what means do you employ for informing them as to where the fire is located?

Do they call up local telephone headquarters for the information?

If you find the telephone central congested by a lot of calls from others than members of the department after the fire alarm sounds, what method would you suggest for avoiding delay in getting firemen to the scene of the blaze?

The Question

This is a continuation of the discussion that appeared in the previous issue. So many chiefs gave their opinion that it was necessary to print it in two installments. This is the concluding portion:

Geo. M. Moody, Chief, Harwich, Mass.: As we do not have a siren, whistle or diaphone for calling firemen, we put all our calls through by telephone. When a fire alarm is received, central immediately calls my residence. If I am not at home, my wife takes the call and immediately calls the man stationed at the fire house, giving him the location of the fire, nature of same, etc. This man then proceeds to the fire with the apparatus needed. The rest of the men are called by telephone and notified of the fire. If any of the men are to be away, they notify my residence in order that a spare man be called in their place. If there is to be no one at my residence, the telephone company is notified. In this case, fire calls are then given to someone who is to be at home. In this way we are covered at all times.

When an alarm of fire is received, one operator is assigned to take care of the calls necessary in connection with the fire. Thus we are given quick service. As a rule, men are at the scene of the blaze within five or eight minutes.

We believe this method is most effective in getting firemen to a blaze without confusion. It is not necessary for the men to call central from their several phones, thereby causing delay due to congestion, as they are notified of the fire. By the time the public knows of the fire, the men have already received the information. Also, by not having a siren to give a general alarm, the highway is not congested with cars.

Ed. Jenkins, Chief, Concordia, Kans.: Fire calls are given to the local telephone office. The chief operator then calls the fire station, giving them the information. The station telephone is connected to an electric siren which blows when the connection is made. This siren notified the paid men at the station. After the chief operator calls the fire station, she then notifies the electric power plant giving them the street number. A general alarm is sounded by them on their large siren. This sounds the number of the ward in which the fire is burning. The volunteer men, upon hearing this siren, call the fire station and are given the information necessary.

Up until a few years ago the telephone service was certainly congested for several minutes after the siren on the power plant sounded, due to the number of calls received from outsiders. Since that time, the court has passed a resolution authorizing the telephone company to discontinue answering any inquiries regarding fires, except those received from firemen.

If a fire occurs at night, the owners of the building or business establishment on fire are notified. The volunteer firemen are also called at their homes when a fire occurs at night.

We do not have much trouble with delays in getting men to a fire. The paid men, having been notified first by the siren which sounds when the operator calls the fire station, usually have a stream in operation before the volunteer men arrive. However, these men arrive at the blaze within a very few minutes. We have found this method of calling firemen very satisfactory, and I would certainly recommend this system to any department having a paid and volunteer department.

Our department consists of three paid men and seven volunteers. We have a seven hundred and fifty gallon pumper, and one chemical and hose truck. Two of the paid men are on duty at the fire house all the time, except at meal time. Our fire loss for 1928 was less than fifteen hundred dollars for a town with a population of fifty-five hundred.

G. E. Zimmerman, Chief, Coronado, Cal.: We do not use a public alarm. Three years ago, when I became chief of the Coronado Fire Department, they were using a Heath coding system for notifying volunteer firemen, and the public. I soon discovered that too many outsiders answered alarms. This, as can readily be understood, interfered with the operations of the department. I then had the siren disconnected. I also found that this old method caused congestion at the telephone office due to calls being received from people who were not members of the department.

Since that time, all the call and volunteer firemen in Coronado were disbanded. We now have a paid fire department.

W. F. Ingold, Chief, Edgewater, N. J.: This town is a quarter of a mile wide and four miles long, having only two streets that run the entire length of the town. We have three fire stations, two a quarter of a mile from each end of the town. The third headquarters, is located directly in the center.

Our fire alarm system consists of fifty-four boxes on four circuits. We have two whistles and one tower bell. These are at the fire stations. There are two trunk lines on the switchboard at headquarters, only one of which is listed. The other is known only to members of the department. The switchboard at police headquarters is connected to the one at fire headquarters, both being in the same building.

Men on off shift respond immediately to their respective stations upon hearing the fire alarm. Upon arriving, they await instructions from headquarters. The apparatus from the two outside companies respond to headquarters. In this way, men can be picked up by the apparatus going to headquarters. However, ninety-five per cent of our men have their own cars. If necessary, the men can use taxis. The policeman stationed at the police booth holds a taxi ready for the use of the fire department. The town pays for the use of the taxi.

Officers have fire gongs in their homes. They all have their own cars and the town supplies them with gas and oil. Off shift officers respond to headquar-

ters and report to the officer in charge. If at a future date it is found necessary, we will have fire alarm strikers placed in the homes of all the men.

C. S. Lazear, Chief, Warwick, N. Y.: We employ a Gamewell diaphone, the sound of which carries four or five miles in any direction. This city is divided into districts and is covered by some Gamewell boxes and some phantom boxes.

Where there are Gamewell boxes, the alarm is blown from the box. However, people living in districts where there are phantom boxes send their calls in by telephone to the central office. There is a box at this office which takes care of these calls. A notched wheel is slipped on the axle. This wheel tallies with the district in which the fire has started. Upon pressing the button, the disc immediately revolves, giving the alarm of fire. The alarm is repeated four times. An indicator at the fire house registers the district being blown. This gives us the direction of the fire.

It is not necessary for the men to call telephone headquarters when a fire alarm is sounded, as every home in our community has a card giving the location of the various fire alarm boxes. This card also gives instructions to those transmitting an alarm from districts where there are imaginary boxes.

T. L. Johnson, Commissioner on Alarms, Lakewood, N. J.: We use an air whistle which blows the number of the box from which the alarm is being sent. Each fire house has an indicator showing the districts. This registers the location of the fire. We also installed a seven horsepower siren on one of our fire houses. This was installed to help the men in this fire house who were unable to hear the whistle when there was a strong northeast gale.

We have five companies, each having fourteen men and two extra men who are held on the list of each company in case an active man drops out. Lakewood has four combination trucks and one hook and ladder.

L. E. Osborn, Chief, Gilroy, Cal.: We have a Gamewell alarm system with a bell for public alarm. This codes the box pulled. Gilroy is divided into three zones.

Our men do not use the telephone to find out the location of the fire, as this would cause a great deal of delay. I believe the best way to get men to a fire quickly is by means of a coding system with a diaphone, not an electric siren. If the electric power should fail, the siren would be useless. Several times we have had alarms come in when the town was in darkness.

J. N. Richards, Chief, Hiawatha, Kans.: We use an electric siren for a general alarm. We also have a telephone radio system which broadcasts an alarm. In addition, we have a separate switchboard for the firemen. The men can all be called at once and I can talk to them all at the one time. If at any time I want to talk to my men, I put in a call for the firemen's hookup and central calls with the fire ring. In this way the operator is saved considerable time and trouble.

We have nineteen volunteer men and get an average of twelve men at a fire. On several occasions we have been timed and it has been found that we get to the blaze within forty or fifty seconds.

S. E. Loony, Mayor, Jenkins, Ky.: We have cards put on every telephone in town advising people what to do in case of fire. The first thing is to call central, giving her the section of the town and, if possible, the building in which the fire has started. Central calls the power plant and the steam whistle is blown according to the information received. These blasts are indicated on the card in order that the location of the fire can be determined by the men.

We have been troubled with congestion at the central office due to calls coming in from outsiders. However, the telephone company has cooperated with us by disregarding all calls except on the lines used by the fire department and officials. That is, these lines are given preference.

Jenkins has a population of approximately nine thousand and I must say the above procedure has worked out very satisfactorily.

F. C. Pfaender, Chief, Winter Haven, Fla.: We employ a siren to sound the fire alarm. Upon hearing the alarm, each fireman calls central and gives his badge number in order to find out the location of the fire. Our central office is instructed not to give information to anyone outside of firemen or other parties who are required to answer the alarm, such as the power company.

By having the cooperation of the telephone company, a great deal of delay is prevented. If, after a short period of time, central sees fit to give anyone information about the fire, she may do so. However, our people have been educated to the fact that they must not interfere with the department.

C. A. Stephenson, Chief, Elko, Nev.: We employ a fire siren that codes the number of the box. The men know the location of the different boxes. When an alarm is sounded, the firemen respond to the box from which the call has been sent.

We do not bother the telephone company unless the call is received by telephone. In that case, we put on a coding mechanism so that the siren will give the number of the box in the district from which the telephone call has been received.

The members of this department work in garages, for the power company, etc., and are so chosen as to be scattered all over the town. In this way, there are some men in every district in the event of a fire occurring at night. During the day these men are all on the streets doing their work. When an alarm sounds they can go immediately to the scene of the fire, arriving there as quickly as the apparatus.

James C. Burrhus, Chief, Walton, N. Y.: Ours is a volunteer department with five pieces of motor apparatus housed in two houses. A bell is located on the central station, and a steam siren at the west end of the village. The alarm is sounded from the central telephone office, the bell ringing the district. The siren, which is hand controlled, also blows the districts. At the telephone office there is a list of about twelve numbers to which preference is given in case of fire. Information is only given to other calls if the party calling is a fireman.

We feel there is a great advantage in knowing just where and what the fire is before leaving the station, as we have two pumpers and depend, to a large extent, for our water supply on three brooks running through the village and the river in back of the business section.

We are now considering the installation of a more up-to-date fire alarm system which will probably be made into a complete box system.

Jos. Riley, Chief, Attica, Ind.: We formerly used a siren for calling out firemen. However, with everyone owning cars this method proved very unsatisfactory. At the present time the local telephone operator receives the alarm and then calls the firemen before sounding the siren. The siren is sounded for the water department and the police, also those firemen who are not near a telephone. In this way a great deal of congestion and delay is avoided, as the firemen know of the fire before the general alarm is sounded. At the central office there are red numbers next to the firemen's telephone numbers to save the operator trouble in calling the men. This system has worked out very well in our community.

W. S. Millard, Chief, Breckinridge, Minn.: For a time we used an automatic indicator giving the streets and avenues in the town. This indicator was located at the fire hall and was operated from the telephone office. However, we find our present system the better of the two.

We now have an electric siren operated from the central telephone office. The first man to arrive at the fire house calls central and secures the necessary information. Central has a list of eight firemen whose phones have preference in case of fire. At night, if the weather is bad, she calls these eight men.

Congestion in the telephone office is avoided by not

(*Continued on page* 557)

Here Is the Problem for the Next Issue

Do you consider fire department conventions worth while?

What benefits do you feel members of fire departments secure through attending such conventions?

What topic do you consider of first importance at the present time for discussion at fire department conventions?

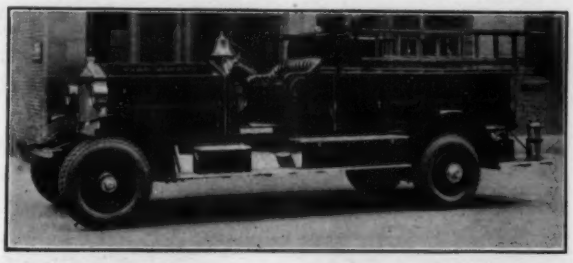
How a Well Drilled Salvage Corps Works

Effective Salvage Work by Worcester, Mass., Insurance Fire Patrol, Continued from Last Week

By HARRY BELKNAP

THE following is the conclusion of the article in the last issue of Fire Engineering on the salvage work of the Worcester, Mass., Protective Department, better known as the Insurance Fire Patrol:

Superintendent Guertain works in close harmony with Chief Charles L. McCarthy, of the Worcester Fire Department, and at big fires on numerous occasions the firemen have assisted the men of the Insurance Patrol. The members



Wagon of Worcester Fire Patrol

of the Box 4 Associates, an organization composed of men having badges and who are interested in fires, also render valuable assistance in spreading covers. They have volunteered their services to Superintendent Guertin and he speaks very highly of the services they have rendered at times when speed and man power were imperative to prevent heavy damage from water.

"The success of salvage work depends on man power," said Supt. Guertin in speaking with the writer on the problems of protecting goods from smoke and water damage. "Many fire departments are doing splendid work in salvage. Of course, the ideal arrangement is to have a special squad detailed for this work when it is carried on by the municipal force; but where this is not possible excellent results are obtained by carrying covers on engine and truck companies.

"I am a strong advocate of the use of sawdust to dry up water. We have 25 bags of sawdust ready for our use at all times at a wooden box factory of which he have a key on each machine so as to be able to enter the factory after working hours. There are three bushels of sawdust to each bag.

"At a fire in the Bay State Hotel that did extensive damage on the upper floors we used sawdust so effectively that we kept the water from getting to the stores on the street floor. We also made chutes of the covers and sent the water out of the windows. This is always a good scheme to prevent damage below.

"We have an electric pump that is very handy for taking water out of cellars. This pump is easily portable and can be run on ordinary house current.

"One of the best jobs that we did was at a second alarm fire in which 11 streams were operated on a blaze in a dance hall on the top floor of a 5-story building. There was a blue print shop on the third floor and the other floors were occupied by a printing shop with presses. One machine was valued at $12,500. The insurance on the contents of the building was $69,000 and the loss was only $8,846.27. With the aid of the Box 4 Associates we spread 150 covers at this fire and used 34 bags of sawdust. There was no damage to the two banks on the street floor."

Work of Patrol During Past Year

The work of the patrol is well illustrated in the following excerpts from the report of Superintendent Guertin for last year:

The number of alarms for the year were: Bell 638; Stills 1993; American District Telegraph 35; Total 2666. Of these 409 occurred in brick buildings, 580 in frame buildings, 26 in brick and frame buildings, 32 in cement buildings, 23 in stucco buildings and 1596 outside.

		Ratio
Insurance on Buildings	10,720,872.32	5.18%
Insurance Loss on Buildings	556,332.83	
Insurance on Contents	3,115,912.29	11.19%
Insurance Loss on Contents	348,697.67	
Blanket Insurance	16,956,770.00	0.12%
Blanket Insurance Loss	21,278.21	
Total Insurance	30,793,554.61	3.08%
Total Insurance Loss	926,308.71	
Buildings, No Insurance	11,148.82	
Contents, No Insurance	23,884.55	
Total Estimated Fire Loss for the Year	961,342.08	

Summary in Part of the Above

No Service Loss; No Fire Dept. Call	13,100.00
Lightning Loss	4,313.50
Losses Paid on Smoke Only	7,996.78
Building Loss, Exposure	19,788.18
Contents Loss, Exposure	4,469.35
Insurance Carried by Mutuals (Included in the above)	1,361,103.65
Loss Paid by Mutuals	46,554.73

How the Worcester Insurance Fire Patrol Saved the Stock of a Men's Clothing Store from Damage

The insurance carried on this stock was $275,000 and fixtures, $2,500. The loss amounted to respectively $1,771.26 and $188.49.

Fire in Shoe Store, Showing Good Covering Work
The total insurance in this case was $6,000 and loss paid only $723.04.

Number of Lives Lost by Fire.....	4

Following Insurance and Losses Are Not Included in Totals

Insurance on Automobiles for Fire.....	12,050.00
Insurance Loss on Automobiles.....	3,405.42
Sprinkler Insurance.....	263,000.00
Sprinkler Insurance Loss.....	8,036.74
Rent Insurance.....	69,500.00
Rent Insurance Loss.....	2,911.15

Summary of Equipment Used

Stock Covers Spread, Insured.....	1,734
Stock Covers Spread, No. Insurance...	400
Roof Covers Spread.....	93
Total Covers Spread.....	2,227
Tar Paper Used (yards).....	531
Sawdust Used (bushels).....	552
Extinguishers Used.....	31
Fires Extinguished.....	15

The record of losses paid to the occupants of the 5-story building mentioned by Superintendent Guertin in which fire broke out in a dance hall on the upper floor was as follows:

Central Building Fire, December 31, 1928

	Insurance	Loss
Building Rear	$ 60,000	$13,711.00
Building Main	300,000	3,409.00
Total		$17,120.00
Contents		
Dance Hall	$ 2,000	$2,000.00
Photo Blue Print	2,000	867.26
G. L. Swan, Printers	4,500	817.42
Pearson, Printers	16,000	2,907.56
Svea Publishing Co.	42,500	1,881.29
Salvage of $522.31 on paper.		
Protective Union Bakery	2,500	372.74
Totals	$69,500	$8,846.27

With no claim from the two banks on the street floor. One hundred and fifty covers spread on four floors and basement. Eleven water lines used.

Equipment Carried on Patrol Car

The following is the complete list of equipment carried on the Ahrens-Fox car of the Insurance Fire Patrol:

50 Rubber Stock Covers
3 New & 1 Old Canvas Roof Covers
1 Roll Tar Paper
5 Brooms
4 Shovels
4 Squeegees
2 Cotton Mops
2 Pails & Sponges
6 Hammers
6 Nail Pouches
3 Boxes Nails (3 sizes)
1 Stilson Wrench
2 Monkey Wrenches (Large & Small)
1 Gas Pipe Wrench (Small)
1 Pair Wire Cutting Pliers (Large)
2 Hose Spannards
2 Sprinkler Head Wrenches
50 Sprinkler Heads (All degrees)
12 Padlocks with screw eyes & Keys
2 10-ft. Folding Ladders
1 20-ft. Extension Ladder
1 20-ft. Extension Roof Ladder
1 Hammer Head Pick
1 Door Opener
1 P.Z. Door Opener
1 Jimmie
1 Crow Bar
1 Fire Axe
Doctor's First Aid Kit
Splints
2 Gas Masks
1 30-ft. Life Line
1 Ball Heavy Cord
1 Roll Window Cord
2 Flood Lights
6 Electric Hand Lights
2 2½ Gallon Chemicals
4 Cans Soda & 3 Bottles Acid
A leather folder with keys to buildings of Worcester
A book giving the location of sprinkler shut offs in buildings and who to call in case of trouble.

Card to Occupants of Buildings Damaged

A card reading as follows is given by the patrol officers to

(*Continued on page* 559)

Confectioner's Was One of Five Floors Involved
In this case, fire originated on top floor of five-story building. Patrol covered four floors and basement. Upper illustration shows first floor store stock covered, and lower, excellent condition after fire.

WITH THE EDITOR

Unjust and Thoughtless Accusation

Occasionally it happens that during the excitement consequent upon a fire—especially if it be in a residence—sneak thieves gain entrance to the premises and make off with what booty can be snatched while the attention of the firemen is diverted to the fighting of the flames. When this occurs, and the robbery is discovered after all has calmed down, it is ten chances to one, that the property owner will accuse the members of the Fire Department of the robbery.

A case occurred recently in one of the larger cities that is somewhat similar to this. A small blaze occurred in a private house, starting in a mattress during the absence of the owner. When the man and his wife returned the fire was out and the firemen in possession of the bedroom. One of them handed the wife, according to her story, her bag badly scorched, and on opening it she discovered some jewelry it had contained missing. The bag, she claimed, had been in her bureau drawer when she went out. Naturally, the first thing to do was to accuse the fireman of theft.

What probably had happened in this particular case was that the sneak thief, after entering the bedroom and removing the bag from the bureau, had abstracted the jewels and then, throwing the bag on the bed, had set fire to the mattress.

It would have been an easy matter for the thief to have effected his escape before the fire was discovered. He may even have had enough sense of humor to have turned in an alarm of fire on his way out, knowing that, in all probability, when the theft was discovered with the fireman present, that they would be accused.

People are entirely too prone to jump to conclusions and accuse the firemen of illegal acts without the slightest justification. Such action is not only unjust, but it also reacts upon the fair name of the Fire Department of which the citizen making the charge should be proud. One should be very careful and very sure of his facts and evidence, before making charges of dishonesty against members of the Fire Department. In practically every case it will be found that a mistake has been made and that the members of the Fire Department have been wrongfully accused.

Tournaments and the Fire Hazard

This is the season of volunteer fire department tournaments, when the members congregate in the convention cities, prepared to compete in all manner of contests and games, and show their prowess and efficiency as fire fighters. This is fine, and no doubt helps to make these men better firemen and more able to handle the engines, hose and tools of their commands.

But, like all of such affairs, the question is apt to arise as to what extent the Fire Department shall participate. Naturally, all of the men are anxious to attend, and it is very hard for those in authority to decide the matter. The result, unfortunately for the city or town, is very apt to be that practically the entire department attends, and the municipality is left unguarded in case of fire.

Even if all of the apparatus does not go to the tournament, there still is the hazard of a large fire occurring during the absence of those attending, and, with the seriously depleted ranks and apparatus, it is possible that such a fire may get away from the small number of men at hand to fight it. As the same condition prevails in practically all of the surrounding towns, owing to their Fire Departments being also in attendance at the tournament, little help, if any, can be hoped for from outside, and it is further possible that, in the event of a conflagration occuring, the town would be practically wiped out before the absent apparatus and men could be returned.

It is all very well to bank on luck and trust that, as nothing has ever occurred before while the engines were away at such affairs, that nothing will happen this year! Luck has a bad habit of deserting one at unexpected times, and the fire that never happened before may occur just at the wrong moment. If it does, it may be hard for the Fire Department authorities to explain to an outraged public why it was left unprotected.

"Flirting with the Undertaker"

Often the small town newspaper tells its story in homely but vigorous phrases which express very clearly—if not in the most select English—what is wanted. The following, taken from a Southern Daily, is certainly a gem in expressiveness and strikes direct "from the shoulder":

"Remember, a fire truck has full right of way over everything, and that you are violating the law and common sense when you dash in front of it going to a fire. And besides, you are flirting with the undertaker, both for yourself and those on the truck. Everybody in a country town wants to get to a fire first. That's natural. And interest, of course, should be shown when property is at stake. But remember that we now have a fire department and a truck; that the truck should get there before you do and that it should be unhampered when it does get there. Who can do the most good at the fire, you or the truck? To ask such a question is to put the answer in your own mind. All right then, let us all be governed accordingly next time the fire siren sounds and let everybody get out of the way

of the truck and by all means, for God's sake remember, don't park in front of a fireplug!"

By the same token, it is a most effective plan for the Chief of the Fire Department to enlist the aid of his local newspaper in the cause of impressing the public of the necessity for them to give the fire apparatus right of way in all cases, and not to attempt to race with or outrun the engines when answering an alarm of fire.

It is quite natural for the autoist to wish to join the procession of rushing cars chasing the fire apparatus to a blaze—the excitement is contagious! But the exercise of a little thought and forbearance on his part may result in the saving of his own life and those of some of the firemen, through the avoidance of collision with the speeding fire apparatus. And an article in his daily paper may open his eyes to the risk he runs and the jeopardy in which he places the men who are risking their lives for his safety.

By all means enlist the cooperation of the press in working for the safety alike of the public and the firemen.

Detroit Has New Headquarters

On the same site where its central fire station stood for many years, the Detroit Fire Department has erected a new structure, at the corner of Wayne and Larned. It will be formally opened with appropriate ceremony on July 1st, unless plans of Commissioner Charles W. Clippert, in charge of department sites and buildings, fall through.

The accompanying photograph shows workmen putting the finishing touches on the structure which is five stories high and has in it what perhaps no other Fire Headquarters in the country has, that is, a garage below the grade of the street for housing the official and private cars of those who have business at headquarters.

That the parking menace might be reduced, the Detroit Fire Department is going to endeavor to keep department

Detroit Headquarters Ready for the Finishing Touches

automobiles off the public highway. The garage below the building is reached on a ramp and it will accommodate forty cars.

The ground floor will house the apparatus of an engine, ladder water tower and rescue company, as well as the cars of the Chief of Department, Stephen J. De May, and the car of the Assistant Chief on duty. A more complete description of the building will be given following the official opening of the new edifice.

WM. JEROME DALY.

Cincinnati School Teacher Demonstrates Her Safety Device
A teacher in a Cincinnati, Ohio, school invented a device which makes a ladder safe regardless of the unlevel surface. The photograph shows her demonstrating the device, which consists of a metal sleeve that is slipped over the short leg of the ladder and clamped by means of an eccentric ratchet.

Final Plans for "Eastern Regulars"

Details of an interesting trip have been arranged for those who will join the "Eastern Regulars" party to the convention of the International Association of Fire Chiefs in Birmingham, Ala. Cars will leave from Philadelphia on Sunday, October 20, to connect at Buffalo with the special train, "The Fire Chief," that will leave New York, Sunday, October 20, at 12:35 p.m. E. S. T.

The party will arrive at Cincinnati on Monday and the men will be taken on an inspection trip through the plant of the Ahrens-Fox Fire Engine Company, while the ladies will be taken on a shopping tour. Luncheon will be served at the Cincinnati Club, and following this a sightseeing trip about the city. In the evening there will be dinner and dancing at the Hotel Gibson. The train leaves Cincinnati at 11 p.m. and arrives in Birmingham at 10:45 a.m. the following morning.

Reservations for the Eastern Regulars will be made at the Bankhead-Leland Hotel, just three minutes from convention headquarters.

Returning, a stopover will be made at Nashville, Tenn., to enjoy a forty-mile drive through the city to see the Andrew Jackson Mansion and the Du Pont Rayon Silk Plant, formerly the Old Hickory Powder Plant.

New York and Philadelphia will be reached early Sunday, October 27. Further details concerning the trip can be obtained from Frederic E. Bensen, No. 2303 Chanin Building, Lexington Ave. and 42nd St., New York City.

Chief Wallace, of Wilkinsburg, Dead

Robert W. Wallace, forty-two years old, head of the fire department in Wilkinsburg, Pa., died in a hospital from injuries received when he fell down a flight of stairs in a private home.

Chief Wallace, in company with his uncle, chief of the police department, visited the home of another official to close an order for fire hose. As the men were preparing to leave, Chief Wallace stepped backward and, missing the top step, fell eight feet.

He was connected with the Wilkinsburg Fire Department for fourteen years. The chief is survived by his mother and two brothers.

Chief Gilday Awarded Cup

Chief John J. Gilday of Hoboken, N. J., was presented with the Stetcher Cup, a trophy awarded by the Fire Prevention Committee of the Hudson County Safety Council.

In presenting the silver loving cup to the chief, he was highly complimented for his fire prevention work and mention was made of the record made in 1922 when Hoboken was presented the National Fire Waste Council grand prize. Chief Gilday in accepting the cup asked that the people of Hoboken give him their continued assistance so that he might win the cup a second time. The Stetcher cup must be won three times before it becomes the property of any department.

Questions and Answers

NOTE—Readers are invited to send in questions, which will be answered in the order received. Names are omitted from questions unless otherwise specified.

Discharge From Large Nozzles

To the Editor:

An engine of 1,000 gallons capacity is pumping through two lines of hose; 85 pounds at hydrant, 1¾-inch tips. Lines are 150 feet 3-inch and 250 feet 2½-inch. How much water is delivered? Show all work.

How much would same engine deliver drafting a 20-foot lift? Same line, same pipes.

Answer: As given, this problem constitutes quite an intricate piece of work. No engine pressure is given, and assumptions will therefore have to be made. Furthermore, it would not be possible in the space available to solve this entire problem in detail, so that where standard operations are involved, they will be indicated rather than worked out in detail.

Formula for finding nozzle pressure where engine pressure and layout is given is as follows:

Nozzle pressure equals engine pressure divided by (1.1 plus K x L).

Where K is a factor depending upon the diameter of the hose and the diameter of the nozzle. For 3-inch hose and 1¾-inch nozzle, K is 0.351.

For 2½-inch hose with 1¾-inch nozzle, K is .907.

L is the number of 50 foot lengths of hose in the line. For the 3-inch line it would be equal to 150 divided by 50 or 3.

For the 250-foot line it would be 250 divided by 50 or 5.

Another point which must be taken into account is the capacity of the engine at pressures lower than its rated pressure of 120 pounds. A 1,000 gallon pumper is capable of pumping its full rated capacity at 120 pounds. If the pressure is lower than 120 pounds, the engine is capable of giving a greater discharge than 1,000 gallons per minute. To just what extent the capacity will increase as the pressure decreases depends upon the type of pump and the particular make of machine involved. It may be safe to say, however, that a 1,000 gallon positive displacement pump should not be operated at a speed greater than 20% increase over its speed at rated capacity. Thus a 1,000 gallon pumper should not be expected to give more than 1,200 gallons per minute no matter how low the pump pressure may be, nor how much help it receives from the hydrant.

Now let us assume an engine pressure to start the problem. Let us take 180 pounds gauge pressure which will mean that the engine will be creating approximately 100 pounds pressure while the hydrant gives 85 pounds. Then nozzle pressure equals 185 divided by (1.1 + .351 x 3) for the 3-inch line.

This solves out to be 86 pounds nozzle pressure.

Discharge may be found by the formula:

Discharge equals 29.7 x D x D x square root of P. This amounts to approximately 843 gallons per minute.

With the 2½-inch line the nozzle pressure would be:

Nozzle pressure equals 185 ÷ (1.1 + .907 x 5), or 32.8 pounds approximately.

This gives us a discharge of approximately 450 gallons per minute through a 1¾-inch nozzle.

Adding these two figures together we get a total discharge of 1,293 gallons per minute which is more than the engine can be expected to give.

By making other assumptions we finally arrive at an engine gauge pressure of 150 pounds.

With this pressure we get 759 gallons discharge from 3-inch hose and 404 gallons discharge from the 2½-inch hose, totalling 1,163 gallons per minute.

The engine can be expected to give this discharge in view of the fact that the gauge pressure is 150 pounds which means that the engine pressure is 85 pounds less than this. In other words the 150 pounds is made up of 85 pounds hydrant pressure plus 65 pounds created by the engine.

Were the engine capable of turning over faster, or if no harm would be done by operating at a higher speed than it was normally designed to operate at, a greater discharge could be secured, for with this engine pressure we are not getting the full power out of the motor which drives the pump.

Answer 2: Considering the second problem, the 20-foot lift will represent a drag on the engine of 20 x .434 or 8.68 pounds. Taking into account the friction loss in the suction hose (the size of which is not given), we can say roughly that there will be a drag of 10 pounds on the pumper. In other words the pumper will have to give or produce 10 pounds more than its discharge gauge shows.

Now with the gauge pressure of 130 pounds, we would secure 60.4 pounds at the nozzle on the 3-inch line and 23 pounds pressure at the nozzle on the 2½-inch line. The discharge from the 3-inch line would be 708 gallons per minute and from the 2½-inch line, 437 gallons per minute, making a total of 1,145 gallons per minute. 130 pounds gauge pressure means the engine is actually delivering 130 plus 10 or 140 pounds pressure. As it is only rated at 1,000 gallons at 120 pounds pressure, it could not, of course, discharge 1,145 gallons at 140 pounds pressure.

Other assumptions are made in turn and finally the figure of 105 pounds gauge pressure is arrived at. At this pressure the nozzle pressure on the 3-inch hose will be 49 pounds and on the 2½-inch hose, 18.7 pounds. The discharge from the 3-inch hose will be 636 gallons per minute and from the 2½-inch hose, 396 gallons per minute making 1,032 gallons per minute discharge.

While the gauge shows 105 pounds pressure, 10 pounds additional due to the suction friction and lift must be added making a total of 115 pounds being created by the engine.

An engine capable of giving 1,000 gallons at 120 pounds pressure should give 1,000 x 120 ÷ by 115 or 1,040 gallons per minute at 115 pounds. Thus the assumption of 105 pounds gauge pressure will give us the approximate full power of the engine and the discharge will be 1,032 gallons per minute.

Tire Inflation Pressure

To the Editor:

An answer to the following question, either through the pages of FIRE ENGINEERING or direct will be greatly appreciated.

A man interested in air compressors stopped in the fire station some time ago and in the course of our conversation he made the following remark: A tank 9 ft. x 3 ft. with a pressure of 95 pounds would inflate a tire 40 x 8" that carries 110 pounds of air. His explanation was that the greater volume in the tank would force 110 pounds in the smaller space in the tire.

We are under the impression that 95 pounds pressure is 95 pounds pressure whether it be in a large space or a small one. If this can be done would you please explain how it works out? Do not pressures equalize themselves, and if so when the pressure in the tire reaches 95 pounds how can the other 15 pounds be forced in when only 95 pounds are left to force it?

It sounds unreasonable, but if there is an explanation we would like to hear it.

N. T.

Answer: As you say, 95 pounds pressure is 95 pounds, and when this pressure is communicated to any other closed container, the pressure cannot exceed 95 pounds in the other container.

Thus if the pressure in a pressure tank were 95 pounds and it inflated a tire, if the pressure was maintained at 95 pounds in the tank, that is the pressure which would be reached in the tire—and no more.

There is one case where pressure can be increased above that at the source and that is through the agency of different size pistons (or other positive displacement devices). For instance, if we had 95 pounds per square inch on 10-inch piston it would give us 380 pounds per square inch on the piston in a 5-inch diameter cylinder if the two pistons were connected with a common rod and if there was no leakage, and no friction. It is the old principle of the hydraulic jack where in one cylinder we may create pressure of 100 pounds per square inch by a hand pump and develop a total pressure of thousands of pounds against a large piston which lifts the load.

New York Presents Fire Medals

Ten members of the New York Fire Department were decorated for personal valor, Assistant Chief Thomas F. Dougherty won a medal for having made the best suggestion for advancement of fire fighting last year, Capt. Thomas J. Monaghan of Engine Co. 283 in Brooklyn received the Stephenson medal for discipline and the officers and members of Engine Co. 33 in Great Jones street received the Fire Drill School medals for having completed the Drill School evolutions in the fastest time, made in all the competitions last year.

The medals were pinned on the breasts of the fire fighters at the City Hall on Monday, June 17th while the thermometer hovered around ninety degrees. Mayor James J. Walker in a brief speech to the medal winners congratulated them and told them the people of the City of New York were proud of them.

The medal men were escorted to the plaza in front of the City Hall by Fire Commissioner Dorman, Chief Kenlon and the medal winners of previous years. The Fire Department Band blazed the way.

One of the medal winners, Fireman Francis Parks of H. & L. 21 had been six times previously decorated for bravery.

The men decorated for heroism were George W. Reilly, of Hook and Ladder Company 19; Francis Parks and Roderick Johnston, of Hook and Ladder Company 21; Frank J. Hines,

New York Fire Department Heroes Receive Medals

Mayor James Walker presented fire department medals for meritorious acts. The photograph shows the Mayor pinning the Administration Medal on the coat of Assistant Chief Thomas F. Dougherty, dean of the New York Fire College. Chief Kenlon is standing to the rear of the mayor.

of Hook and Ladder Company 30; John E. Hess and Frederick J. Widmayer, of Hook and Ladder Company 108; Ellis S. Grapper, of Hook and Ladder Company 123, and Stephen J. McArdle, of Engine Company 22.

Winners of the Fire College medals for efficiency in drill and evolution in the fire company school were Captain John J. Brennan, Lieutenant John P. Hill, Engineer Peter F. Witte, First Grade Firemen Daniel F. Bailey, Vincent P. Fitzsimmons, Louis W. Linhat, Robert Grant, Francis Koshler, Patrick Donovan, Frank L. Maixner, Eugene F. Simon, Andrew Kelly and Patrick O'Keefe, Second Grande Fireman Michael H. McCann, and Third Grade Fireman John P. Ferris.

The evolutions that each of the competing companies had to execute are as follows:

Hoist line to roof outside of building, making line fast under cornice and on roof with approved knots.
Remove burst length from line between the fourth floor and roof, and between fourth floor and street; replace with new lengths.
Stretch two 3-inch lines from high pressure hydrant and connect to standpipe; fire on sixth floor.
Stretch 3-inch line from high pressure hydrant, connect to standpipe floor valve inside of building; outside connection is out of order.
Stretch three lines and make connection to turret pipe on hose wagon, and operate with proper size nozzle.
Stretch two lines, connect to rail pipes on hose wagon and operate with proper size nozzles.
Stretch 3½-inch line from fireboat and connect to high pressure hydrant.
Stretch 3½-inch line from high pressure hydrant and connect to water tower.
Siamese two 2½-inch lines with one 3-inch lead line. Put on Perfection pipe holder and proper size nozzle.
Stretch in as many 2½-inch lines as possible to lead out with one 3½-inch line; put on Eureka pipe holder and proper size nozzle.
Stretch 3½-inch line with three 2½-inch leading lines which can be controlled independently.
Stretch 3-inch line, put on Paradox pipe holder with proper size nozzle.
Stretch 3-inch line and put on street pipe and stick with proper size nozzle.
Stretch line by ladder to third floor and place line in proper position to operate through window, and fasten with ladder strap.
Stretch lines and make connections to cellar pipe, sub-cellar pipe, Baker pipe, Hart pipe and distributors, and operate same.
Make proper connections to take suction, and place fresh water feed in service at fire.
Hoist thirty-five-foot ladder to roof and lower same to yard.
Raise and lower thirty-five-foot ladder.
Raise and operate aerial ladder.
Stretch line by aerial ladder, place it in proper position to operate through window.
Relay water.
Place 2½-inch hose line by fire escape to sixth floor.

Engine Company No. 33 at Great Jones street, Borough of Manhattan, completed the twenty-two evolutions in the remarkable time of seventeen minutes and fifteen seconds, with no time allowance.

WM. JEROME DALY

NEW JERSEY CHIEFS WITNESS TWO SPECIAL DEMONSTRATIONS

Interesting Meeting Held in East Orange—Question of Life Hazard in the Use of Carbon Tetrachloride Extinguishers Discussed

TWO special demonstrations by fire equipment manufacturers and several papers were arranged for the edification of the chiefs and guests who attended the first quarterly meeting this year at East Orange, N. J. Chief Charles Greenfield, president, presided, and introduced Hon. Charles H. Martin, mayor of East Orange.

Mr. Martin pointed out the low loss of thirty-nine cents per capita that the city enjoyed, the lowest since 1915, and that considerable credit is due Chief Charles A. McGinley. Short talks were given by Sidney Colgate, president of the Chamber of Commerce, and Edward W. Jackson, president of the Essex County Park Commission. David I. Kelley, secretary of the Essex County Park Commission, and formerly in charge of the Bureau of Combustibles, New York Fire Department, told of some of his experiences in the department and especially of the handicaps set in the way of the early instructors of the New York Fire College.

Chief J. J. McMillan of Orange contributed a paper for the Essex County Unit on "What Is the Effect of Tetrachloride on the Human System." This prompted considerable discussion and Chief McMillan was asked to answer several questions on this subject.

R. J. Cadman of the New Jersey Fire Rating Bureau spoke on the formation of a fire department school along the lines established in a number of western states, and New York, where thirteen fire school zones were laid out. He suggested that the state be divided into three zones for school instruction. Sedley H. Phinney, executive secretary of the New Jersey State League of Municipalities, elaborated on this subject. The president decided to bring the matter of schools to the attention of the governing board to decide whether the association will take an active leadership in having such instruction centers established similar to the short courses given in other states. Rutgers University was suggested as one point for holding this school.

Wm. D. Lindsey, president of the Garrison Fire Detecting System, gave a demonstration and lecture of how a special fire wire that is concealed in the mouldings of rooms to be protected, makes a short circuit in case of fire, and sounds an alarm. The system can be arranged so that a signal will flash to give the exact location of the blaze.

(*Continued on page* 555)

MAN KILLED IN TANK CAR BLAZE AT OIL REFINERY

Fire Started at Car Loading Platform of Kansas City, Kan., Plant—Safety Valve on Cars Prevented Explosion Danger

ONE man lost his life attempting to shut off a valve from a filling hose to the storage tanks when an oil fire started at the loading platform of the Independent Oil Company, Kansas City, Kans. Plant officials attribute the fire to high humidity which prevented the diffusion of oil fumes so that the vapors hung low and seeped into the boiler room, a few feet from the railroad tracks.

Besides the damage to the tank cars, and the loss of 100,000 gallons of gasoline, two compressor buildings were damaged considerably. The wind confined the fire to its point of origin and helped the department extinguish the blaze. Safety valves on the tank cars opened and prevented some severe explosions.

Aerial Photograph of Fire at Loading Dock of Oil Refinery

The heat was so intense that it twisted the heavy steel rails under the tank cars. A huge truck that was on fire was used to pull cars of gasoline from the line of burning tankers to which they had been attached.

Forty city firemen, and company employees together with volunteers, fought the fire that threatened to destroy the refinery, valued at $3,000,000.

Tin barricades were used to protect the hosemen from the intense heat, and the men who tried to uncouple the railroad cars had to work with the protection of a water curtain. The fire department had nearly seven thousand feet of hose laid. There were five hose companies, two truck companies and two pumpers at the fire.

The city ambulance and a private ambulance were also on hand to render service.

If the wind had shifted, the fire would have destroyed a $500,000 cracking still unit that was being installed. A large stock of valves and pipe fittings that had just been checked was destroyed when the warehouse burned.

Airplanes from the Fairfax field, but a few blocks from the refinery, took up passengers anxious to view the fire from the sky.

Mine Fire Comes to Surface

After blazing for forty-five years in the coal grounds near New Straitsville, Ohio, a fire broke out at the surface and spread a pall of deadly gas over the hillsides. Miners from several coal companies in the section blasted around an exposed crater of nearly fifty square feet in an effort to shut off the flow of air and check the flames.

The fire started originally in the early '80s by men who fired a mine during the quarrels resulting from a strike. Ever since then the blaze has been smoldering, and the fire ate its way along coal veins and occasionally it came up to the surface. It has been held directly responsible for a number of mine cave-ins and for the razing of some buildings.

Six homes at the edge of New Straitsville were believed to be in the direct course of the fire and the New Straitsville village school, the foundation of which goes through the burning vein, was endangered.

The crater from which the flames were issuing was only about six feet deep, this being the approximate thickness of the burning vein. At the point where the fire broke through it is about three feet under the surface of the ground.

Millions of dollars' worth of coal have been consumed by the fire, and hundreds of thousands of dollars have been spent in vain efforts to extinguish it.

Manila Ship Afire at Sea

The Viking was burnt to the waterline in the Visayan Sea after a series of terrific gasoline explosions that ripped her superstructure to pieces and killed outright an undetermined number of the crew of twenty-eight. The Delhi, a German steamer from Manila, Philippine Islands, was the first to reach the stricken vessel, and picked up several of the crew floundering in the water. The men were so badly burned that the Delhi changed its course to obtain medical attention for the stricken in the least possible time. The captain of the vessel was picked up by a lighthouse keeper after being adrift for twenty-three hours.

WHAT'S BURNING

THE following list includes fires of $25,000 loss and over in the United States and Canada, for the periods designated in the headings. These figures, compiled from telegraphic reports, are based on estimates made at the time, and are subject to later investigation and consequent revision. Taken as a whole, however, they give an approximately correct view of the losses incurred. The figures represent loss in thousands.

Week Ending June 14

SCHENECTADY, N. Y.—Zantner Bros. garage damaged	25
CRYSTAL SPRINGS, MISS.—Plant of Planters' Package Co.	400
SELMA, ALA.—Brownlee-Lowery Lumber Co. plant, 5 mi. distant	50
IPSWICH, MASS.—Property of I. R. Thomas damaged	40
MATTSON, ILL.—Bldg. occupied by Nat'l Broom & Duster Co.	25
SOUTH ORANGE, N. J.—Residence of Mrs. M. Casterton	25
LYONSDALE, N. J.—Paper plant of Moyer & Pratt	65
SPOKANE, WASH.—Whse. of Zellerback Paper Co.	125
BOSTON, MASS.—Hangar at Boston airport damaged	70
WINTHROPE, MASS.—2-story wooden block, Shirley St.	65
EDGEWATER, N. J.—Bldg of Barrett Mfg. Co.	25
RUSHVILLE, IND.—Fertilizer plant of W. B. Norris	40
S. BILLERICA, MASS.—Farm bldgs. of I. A. Johnson	25
BLUEHILL, ME.—Bluehill Memorial Hospital	165
LOS ANGELES, CAL.—Derricks in Santa Fe Springs oil field	700
DONALSONVILLE, GA.—Dredge on Chattahoochee River	90
DENMARK, ME.—Denmark Inn destroyed	30
GRAINO, CALIF.—Grain elevator on Balsdon & Scarlett Ranch	70
NORTH BRANCH, N. J.—Store of J. E. Glaser, adj. property	30
NEW ORLEANS, LA.—River packet of Coast Navigation Co.	30

Dense Smoke Covers City Hall Area of New York City

Fire which swept the building occupied by the American Steel and Wire Company, Park Place, New York City, generated dense volumes of smoke that flooded the City Hall Park section. The fire was out in fifteen minutes. Note the ventilation of the roof in the photograph.

LODI, CALIF.—Plant of California Pine Box Co..... 40
DUMONT, N. J.—Harris Bros. lumber yards..... 65
COLUMBUS, N. DAK.—Property of Truax-Traer Mines..... 30
WASHBURN, ILL.—Grain elevator of J. W. Abott..... 25
BURLINGTON, IOWA.—Burlington Basket Co..... 180
SEATTLE, WASH.—Harrison dye works destroyed..... 25

Week Ending June 21

BINGHAMTON, N. Y.—Erie R. R. bridge, 7 mi. west..... 100
ST. PAUL, MINN.—Bldg. occupied by Drewry & Sons..... 25
POINTE CLAIRE, QUE.—Beaconsfield Golf Club destroyed..... 80
WAVERLY, N. Y.—Business property, 381-87 Broad St..... 25
PHILADELPHIA, PA.—Whse. of Atlas Grocery Co..... 25
HAMPTON, VA.—Factory of R. C. Lee & S. S. Coston..... 80
WAUPACA, WISC.—Jerry Rusk Hall, at Veteran's Home..... 30
COLUMBUS, OHIO.—Bldg. occupied by Enzor-Hoel Co..... 55
PITTSBURGH, PA.—Fashion Wall Paper Co. store..... 25
EASTHAMPTON, MASS.—Easthampton Community Bldg..... 35
HURON, S. D.—M. R. Brumwell Lumber yard..... 65
LOS ANGELES, CAL.—Whse. of Sawdey & Hunt Co..... 65
CHELSEA, MASS.—Plant of Bay State Wrecking Co..... 80
PATERSON, N. J.—National Silk Dyeing Co..... 200
FREEVILLE, N. Y.—Mill property of M. C. Messrzy..... 40
BLOOMSBURGH, PA.—Plant of Bloomsburgh Paper Co..... 80
DANVILLE, VA.—Holbrook St. church and school..... 25
PATERSON, N. J.—Gerring Silk Dyeing Co..... 80
MONTEAGLE, TENN.—Monteagle Hotel destroyed..... 65
COTTONWOOD, ALA.—Rambo Lumber Co., near here..... 60
TUSCALOOSA, ALA.—Laundry at Bryce Hospital..... 25
ALBANY, N. Y.—Bldgs. at 362-68 Hamilton St..... 30
PAWTUCKET, R. I.—Icehouse of Citizens Ice Co..... 30
TORONTO, ONT.—Factory of Luxfer Prism Co..... 25
MATUNUCK, R. I.—Summer residence of S. C. Smith..... 25
BROWNWOOD, TEX.—McCullough's grocery whse..... 50
WINFIELD, W. VA.—Brown Hotel and adj. property..... 125
DETROIT, MICH.—Bldg. of Detroit Metal Corp..... 25
LEXINGTON, KY.—Crystal Restaurant and adj. bldgs..... 65

OHIO CHIEFS HOLD CONVENTION IN THREE SEPARATE SECTIONS

One Entire Day Devoted to Display of Apparatus and Demonstrations—Chief Robert Leedom of Portsmouth Elected New President

By R. B. CRISWELL

AN unusually large number of exhibits and a record registration of members helped to make the twelfth annual convention of the Fire Chiefs' Association of Ohio, held in Sandusky on June 11-13, a successful one. Chief John D. Curtis of Sandusky proved to be an able host and was well assisted by various civic organizations.

Chief John D. Curtis, Convention Host

Chief Delos K. Moser of Warren responded to the address of welcome delivered by E. H. Savord, city solicitor. The principal address of Tuesday morning was delivered by Ray R. Gill, state fire marshal of Columbus. A general business session followed.

In the afternoon the gathering broke up into three sections, and meetings were held at various locations. Chiefs of full paid departments met under the direction of Chief Edward Green of Steubenville. The principal topics discussed were safety films, fire doors and building inspections. Heads of volunteer departments met under the guidance of Chief Henry Eisenmenger of Franklin. They discussed firemen's indemnity and other subjects.

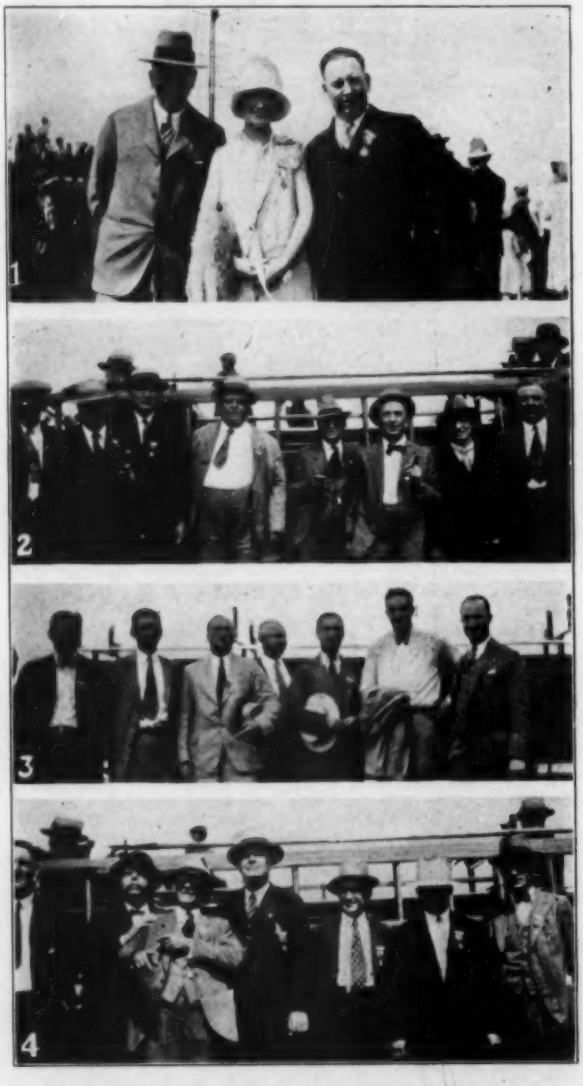
Those in charge of industrial plant brigades held a meeting that was in charge of Chief Edward Foran of the Goodyear Tire and Rubber Company. They discussed the care and maintenance of fire extinguishers, the adaptation of extinguishers to particular types of fires; dangers of static electricity; the use of powdered coal as fuel and the attendent dangers.

Throughout Wednesday there were demonstrations and an opportunity was afforded to inspect the display of apparatus and equipment. arranged around the municipal dock. In the evening the delegates were guests at an excellent fish dinner in the banquet room of the Sloan Hotel. The principal address of the evening was made by George H. Bender of Cleveland, state senator, who was largely instrumental in securing the recently enacted Firemen's Pension Law. Following the banquet and address, the delegates went to Cedar Point to enjoy dancing and other amusements at the park.

The first address on Thursday morning was one by R. B. Criswel, engineer of the Ohio Inspection Bureau, Columbus, on the "Installation of Water Mains." He pointed out the necessity for every fire chief becoming thoroughly acquainted with the water system of their respective communities, and the dangers of disastrous fires occurring frequently if the water systems are left entirely up to the water department.

The other address of the morning was on "Arson Law," by C. S. Magruder of the arson squad of the National Board

(*Continued on page* 559)



Among the Host of Visitors Present

Reading from left to right (1) Chief Robert Leedom, Portsmouth, newly elected president and the 1930 convention host; Betty Kelly, State Fire Marshal's office and official stenographer of convention; Posey Flowers, Portsmouth, whose songs enlivened the gathering. (2) Third from left, Berger of Fremont, Grogg of Tiffin, McFarland of Marion, Harty of Youngstown Sheet & Tube, and Bryan of E. Liverpool. (3) Factory representatives, apparatus and equipment men. (4) Green of Steubenville, Welch of Columbus, Moser of Warren, Speddy of Lakewood, McGranahan of Wheeling, W. Va., Cook of Bridgeport, and Coleman of Martins Ferry.

Fighting the Warehouse Fire

(*Continued from page* 544)

This applies particularly to floors above the fire floor, and as there is less danger in the event of floor collapse with men working on floors above, they can be sent in with lines to cover vertical shafts and thus prevent fire from reaching the floors above the fire floor.

When the fire has been brought under control, the department should properly overhaul, taking care to

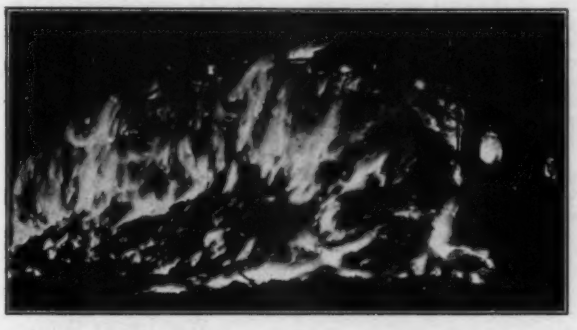


Fig. 3—It's the Contents that Count.

Warehouse fires differ widely because of their contents. This picture shows the contents of a sugar beet warehouse at Belmont, Iowa, burning merrily. The fire continued to burn until the contents, as well as the structure, were completely destroyed.

drain water out of building by channels where least damage will be done. It is usually possible to get the water from fire floor down stairwells, elevator or other shafts, and thus prevent water damage to stock on floors below which were not affected by the fire.

N. J. Chiefs Witness Demonstrations

(*Continued from page* 552)

Following this, David Leerburger of the Fyre-Freeze Corporation, presented a paper on the carbon dioxide fire extinguisher, and by means of a portable model, discharged the CO_2 snow into the room, and then on clothing, to show that it left no mark. Motion pictures were shown of test fires extinguished by this type fire extinguisher and of the New York Fire Department using carbon dioxide to put out fires.

Chief M. T. Kennedy of West Orange read a paper on "Ventilation of Buildings."

During the luncheon, music was furnished by a forty-five piece orchestra of the East Orange High School.

President Greenfield urged the chiefs to be present at the convention of the Eastern Association of Fire Chiefs that will be held at the Hotel Pennsylvania, July 11 and 12. He reported that every officer in the New York Fire Department was a member of this association and that about fifty per cent of the officers of the Philadelphia department had joined.

The following are those who attended the East Orange meeting where Chief McGinley made an excellent host:

Elies S. Amerman, Morristown; F. E. Bensen, Ahrens-Fox Fire Engine Co., N. Y. C.; Wm. Paul Babcock, Nyack, N. Y.; Geo. F. Baier, New Brunswick; Wm. Balback, Keansburg; Aaron E. Baker, Maplewood; E. G. Beckert, West New York; Otto F. Beutell, Red Bank; Oscar A. Bock, Vaux Hall; G. R. Bodine, Long Branch; Walter J. Bond, Union; H. W. Breder, Egg Harbor City; Chas. E. Burr, Bordentown; Chas. Buono, Hawthorne; J. Burke, Westfield; R. M. Cadman, Red Bank; James H. Cavanaugh, Madison; Harvey Campbell, Irvington; A. T. Clanahan, Harrison; Chief Henry A. Christ, Milltown; Albert Chamberlan, Hillside; James Clark, Rutherford; L. H. Clark, Pyrene Mfg. Co., Newark; Samuel Cohen, East Orange; S. B. Conver, Ocean City; John J. Cullinan, Morristown; C. H. Day, Mendham; C. A. Debbins, Morris Plains; H. C. Decker, Westfield; Louis E. Dinesen, Dumont; Clarence H. Dongal, Livingston; W. J. Dunn, Plainfield; Geo. A. Estler, Boonton; Nelsen S. Erhart, Bi-Lateral Fire Hose Co., N. Y. C.; Estelle M. Finnerty, Bloomfield; James J. Fagan, Pyrene Mfg. Co., Newark; Isaac S. Foster, Dumont; Chas. H. Fischer, Consulting Engineer, N. Y. C.; Harry J. Francis, New Brunswick; J. W. Francisco, Bloomingdale.

L. E. Gehm, Ridgefield Park; Jethro Gibbs, Montclair; John J. Gilday, Hoboken; Frank Gloor, Totowa; Garfield Grambo, Kearny; F. M. Green, Morristown; Chas. W. Greenfield, Arlington; Geo. Vincent Grillo, Hawthorne; Herbert J. Groom, Englishtown; Chris. H. Hasselhuhn, Carlstadt; F. A. Helmlinger, South Orange; Jos. P. Hillman, Ocean City; William T. Hirdes, Belleville; Geo. Holzworth, New Brunswick; Wm. Hoppe, Jr., Ridgefield Park; H. Houst, Ridgefield Park; W. M. Hunter, Ridgefield Park; T. Howell Johnson, Treasurer, N. J. S. F. A., Newark; Chas. F. Johnson, Harrison; Geo. Kaufman, Keansburg; James T. Keegan, Newark; Walter H. Keepp, Keansburg; John J. Kelly, New Brunswick; M. T. Kennedy, West Orange; John J. Klein, New Brunswick; Geo. E. Koeber, Bloomfield; Andrew G. Koehler, Somerville; J. Alexander Lamie, Morris Plaines; David Leerburger, Fyre-Freez Corp., N. Y. C.; A. B. Lembeck, Demarest; W. D. Lindsey, South Orange; Walter McLain, Medford; Chas. A. McGinley, East Orange; John A. McIntyre, Morristown; William McKenzie, New Brunswick; James J. McMillan, Orange; Julius Magash, Wallington; John J. Masterson, North Caldwell; Clifford E. Massey, Lumberton; Frank Morrisey, Monmouth Junction; Chief Matthews, Greystone Park; N. T. Miller, Manasquan; Frank Miller, Linden; Geo. Miller, East Orange; James Molyneux, Bordentown; Paul J. Moore, East Orange; M. Murphy, N. Y. C.; J. O'Brien, East Newark; Andrew C. Ogden, Kenilworth; John S. Olbricht, Carteret; William F. O'Neill Weehawken; Howard C. Opdyke, Keansburg.

John W. Pape, Bergenfield; Adam Pavlich, Wallington; N. L. Parmelee, Newark; Theodore M. Pennock, Mt. Holly; Henry M. Phillips, Hammonton; Knowlton F. Pierce, Kearny; Oliver B. Presbey, Long Branch; Vincent M. Preston, Manasquan; William Rapp, Carteret; Andrew Rhine, New Brunswick; Walter Ritzman, Rahway; T. H. Ryan, Harrison; Louis Sass, New Brunswick; Louis E. Scherrer, Roselle Park; F. A. Schultz, Hasbrouck Heights; Jos. Schwark, Long Branch; Herman Schweickhardt, Union; Michael Shagen, Wallington; James J. Sheehan, West Orange; Alfred P. Smith, Madison; J. J. Smith, Westfield; Frank R. Smith, East Newark; William J. Smith, Bridgeboro; E. S. Spinning, Bernardsville; Harry H. Stager, Nutley; B. Stavely, Boonton; James Stevens, East Orange; D. S. Stewart, Monmouth Junction; J. Swiss, East Orange; Rev. W. P. Taylor, East Orange; Chas. E. Thiel, Ridgefield Park; H. A. Tice, Ridgewood; Fred Trowbridge, Secretary, N. J. S. F. A., Morristown; Arthur S. Walker, East Orange; Richard A. Weaver, East Rutherford; O. P. Whitehead, Boonton; Harry A. Wieronga, Plainfield; Raymond A. Wingerath, Fairview; S. H. Wise, Bernardsville; N. N. Wolpert, Assistant Editor, FIRE ENGINEERING, N. Y. C.; H. S. Worman, Boonton; Wm. Ziegler, Hackensack.

Kansas Short Course a Success

The forty-second annual meeting of the Kansas State Firemen's Association at Newton the first week in June was of more than ordinary interest, due to the first firemen's short course conducted under the direction of Kansas University. Over two hundred registered in the classes. Instructors from the University, a local fire chief, a representative of the U. S. Department of Agriculture, and men of national prominence in fire protection and prevention composed the corps of instructors. Chancellor E. H. Lindley of Kansas University made a very interesting talk on "The Possibilities of an Education," and Frank Jewell Raymond of New York delivered an address on "The Great Fires of Life."

Salina was selected as the meeting place for 1930. Profiting by the experience of this year, there is every reason to believe that next year's efforts will be even greater, and it is expected the attendance will be at least doubled.

Fire Threatens Down Town District of Seattle, Wash.

Fire swept through the Rialto Building in Seattle, Wash., and all available fire apparatus in this area was called to fight the flames which burned out of control for more than three hours. There was a forty mile south wind to hamper the department. The above photogaph was taken during the height of the fire.

Many Attend Wisconsin Course

Five hundred firemen from sixty-four Wisconsin cities enrolled for the short course in fire-fighting held at the University of Wisconsin, Madison, Wis., June 25-28. Dr. Glenn Frank, president of the university, made the welcoming address.

The lecturers included Chairman Fred M. Wilcox, state industrial commission; J. E. Kennedy, chief assistant fire marshal of Wisconsin; Chief Peter Steinkellner, Milwaukee Fire Department; W. C. Muehlstein, building engineer of the state industrial commission; George Knoll, representative of the Mines Safety Appliance Co., Chicago; Clarence Goldsmith, assistant chief engineer, National Board of Fire Underwriters; C. R. Welborn, Underwriters' laboratories; Dr. David J. Price, U. S. Department of Agriculture, specialist in dust explosion. In all, there were twenty speakers on the program.

The committee in charge of the short course consists of J. E. Florin of the state industrial commission; Richard Widman, Wisconsin State Firemen's Association; Wm. Wipperman, Wisconsin Paid Firemen's Association, and H. E. Pulver, University Extension Division.

False Alarm Recorder Tested in New York

A photo electric fire alarm recorder which makes four feet of motion picture film of a person snapping the handle on the door of a single-action firm alarm telegraph box, was demonstrated in front of the New York City Hall on Monday, June 17th, as part of public ceremonies attendant upon the presentation of medals to members of the New York Fire Department for personal valor in the line of duty during the year 1928.

Mayor James J. Walker was photographed in the act of turning the handle on the alarm box. The contrivance is a motion picture camera containing 25 feet of film. The camera is rigged on a yard-arm from the top of the box. The yard-arm makes a half-circle every time the handle of the box is pulled. A siren also howls for about five seconds and attracts public attention, while the camera makes a picture of the area immediately in front of the box. A 1,000-watt lamp also lights simultaneously with the snapping of the box handle in order to illuminate the area in the night time.

Each alarm, or each turn of the handle uses four feet of the film; thus the film magazine is sufficient for six pulls of the box. The invention is the product of the Photo Electric Fire Alarm Recording Company of Bayonne, N. J. The inventor scouted the suggestion that anybody would be mischievous enough to hold up an umbrella and thereby defeat the camera. He likewise did not think that any boy from the sidewalks of New York who desired to send a false alarm would first throw a brick at the camera perched on high and, having rendered it useless, then turn the handle of the box.

Mayor Walker Turning in the Alarm. At Left, Sample of Photographic Strip

Mayor Walker agreed to give the false alarm detector a try and for the newspaper photographers he turned the handle, but when they asked him to do it again for another "shot" he balked, stating that one false alarm a day was enough. Of course, the alarm box was not connected and there was no response to the performance.

New York City has a false alarm record of approximately 25% of the total annual alarms of fire. The convenience of the so-called "spade-handle" box is one of the contributing causes for this record. The false alarm season in New York is in the mid-afternoons when schools are dismissed, in the evening when the corner loafers have nothing else to do and in the early morning when the night clubs unload a certain type of patron. When told this, Mayor Walker smiled and said of the latter: "Well, they evidently feel that they are lit up."

Chief Val. Fendrich and Fire Commissioner John J. Dorman were non-committal on the virtues of the new false alarm detector. The inventor was aglow with enthusiasm, until the writer suggested to him that police magistrates could do more to reduce the number of false alarms by the imposition of drastic penalties than all the fire alarm cameras in creation. The average penalty for a false alarm of fire in New York is five dollars. It is often a suspended sentence, especially if the miscreant is intoxicated.

WM. JEROME DALY.

Numerous Cities Have Fire Police

The State Bureau of Municipal Information has made a special survey and announced that twenty-nine communities in New York have fire police. While in the main there is little deviation in the type of service they perform, each city has the unit organized on special lines.

The fire police company in Utica, N. Y., performs salvage duties as well. The company is organized, equipped and managed in the same way as are other companies of the fire department. It has a squad wagon equipped with salvage covers and outfits for twelve men. The men of this company must establish fire lines and police them, protect stock with the salvage covers, render first aid to the injured, and perform other services, if necessary. The members have full police powers during fires.

Peekskill and Poughkeepsie operate on much the same plan. In Poughkeepsie, each fire company appoints one man who is given a special badge and designated to act as a policeman at fires in establishing fire lines and so forth. In the other city, each company appoints five men for this service. As there are five companies, twenty-five men are made available for this work. They help in salvage work and check up on violation of the motorists who park closer than ten feet to the hydrants.

"Beautiful Station" Draws False Alarms

Members of a new fire house opened in Providence, R. I., who prided themselves on having the most beautiful fire station in New England, had an ample number of fire runs after a dinner planned to mark the opening of the new house.

The exterior of the new station is of Dutch Colonial design. The station is constructed of brick and timber with gabled roof. The station costs approximately $45,000.

As firemen were showing guests about, an alarm came in. But that proved false, and they were soon back to act as hosts for the many visitors. Scarcely had the apparatus been placed in position when another alarm came in. Boxes were pulled from all sections, and as each call came in, the apparatus rushed out on what later was learned to be false alarms.

The din of apparatus rushing back and forth excited the residents of the district, and there were soon telephone calls from the curious wanting to know where the large fire was. After an hour of false alarms, quiet was restored.

Forest Fires in South Mostly Caused by Man—Unlike forest fires in the West that are mostly caused by lightning, the majority of the fires in the southern states are man-caused, according to the United States Department of Agriculture.

Hamilton, O., May Issue Bonds—Hamilton, Ohio, is considering a $50,000 bond issue to partially finance the construction of a new fire house.

The Round Table

(Continued from page 546)

answering calls coming from outsiders. Curiosity seekers are our worst hindrance.

W. J. Dessin, Chief, Burlingame, Cal.: We employ a diaphone for calling our men. We have a set of character wheels at the fire house which give the approximate location of the blaze.

By August 1st of this year we expect to have seventy-two boxes completed. We will then be able to code the location of a fire within a block or so. In this way a greater amount of efficiency will be obtained.

Our telephone company will not give information regarding an alarm to firemen who might call. In the near future we will be in a position to have an extra man stationed at the fire house to remedy this situation. The reason the telephone company will not handle the calls is because many other people aside from firemen persist in calling for information. This caused a great deal of congestion and hence the service was very poor at that time.

A. Edgar Knowles, Chief, Tarpon Springs, Fla.: We use an electric siren as a general alarm in calling out firemen. It is necessary for the men to call the local telephone office for information as to the location of the fire. We have what we term a "silent" number which is known only to firemen. When this number is dialed on the automatic telephone, the operator answers the call at once.

We have used this system for the past two years and have had no delays in getting the location of the fire.

E. Bowen, Chief, Corona, Cal.: The telephone operator at the central office calls the firemen before 7 a.m. and after 9 p.m. If a fire occurs any other time, the men have to depend on getting central and asking for the necessary information.

The best method of getting men to the blaze without delay in case of congestion at the local office is to have the operator connect them to the department telephone. Some city employee, such as a member of the police department, should have charge of this phone during an alarm of fire. This applies to the hours between 7 a.m. and 9 p.m.

The members of this department have a special code or call known only to the telephone operators and firemen. This does away with others calling for information.

R. Smith, Chief, South Jacksonville, Fla.: We have a Gamewell fire alarm system. The siren is only used to give the general alarm. When the alarm is sounded, the men call the central fire station or stop at the station and read the tape. Before we had this fire alarm system, and only used the siren, the town was divided into wards and the siren blew one long blast to give the alarm and as many short blasts as was necessary for the particular ward.

Elmer Madson, Chief, Grand Rapids, Mich.: We use a fire siren which is handled by the telephone company. The operator, after receiving the call, presses a button and sounds the alarm. She then waits for the first man to reach the fire hall. This man, upon arriving at the station calls the operator and secures the information necessary.

At the central office, the telephone numbers of the firemen are painted red. This makes it easier for the operator to take care of calls during a fire. At a glance she can tell whether or not a fireman is calling. This relieves a great deal of congestion and much valuable time is saved.

Geo. K. Roberts, Chief, Shelbyville, Ill.: We employ an electric siren for calling the firemen. After receiving an alarm, the telephone operator calls the fire station and gives them the location. She then calls me so that I know just where the fire is.

Upon hearing the siren, the men call the operator for information. In order to avoid delay, the telephone company has a system whereby all firemen's phones can be connected on the same line. Thus any member calling the operator is immediately connected to this line and can secure the location of the fire. This system, while I realize it can be improved upon, has proved very satisfactory here.

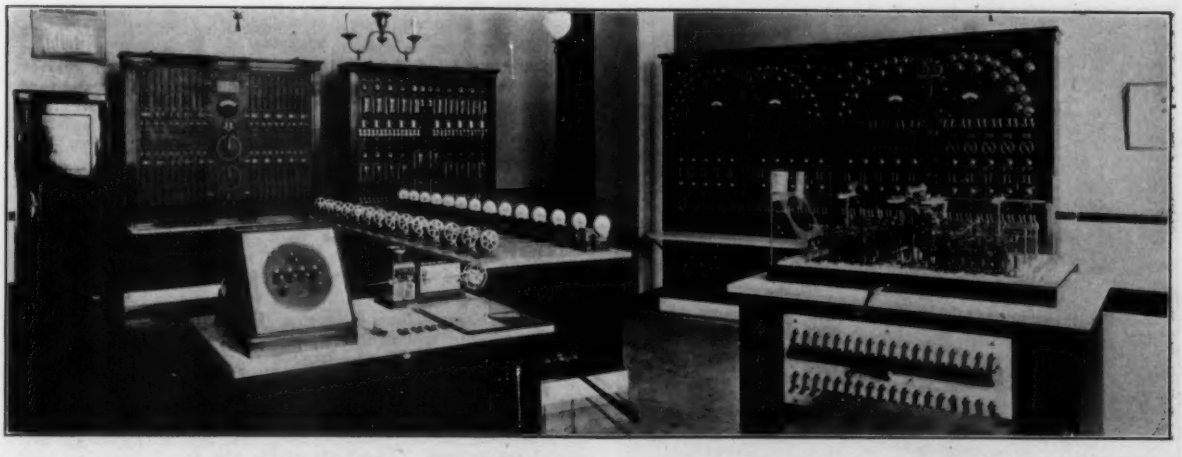
During 1928 we had twenty-eight fires which involved a loss of $4,252. The insurance on the property involved in these fires amounted to $42,025. To my mind this shows that our method of calling out the men is not so bad.

E. N. C. Davis, Chief, Haddon Heights, N. J.: We employ a fire siren for calling out the men. When an alarm sounds, the men all respond to the fire house located in the center of the borough.

There is a special telephone whereby men can call the local telephone office for information. The telephone operator is not supposed to give information to persons other than firemen or policemen.

Frank M. White, Chief, Guilford, Conn.: We employ a whistle for an alarm of fire. Each street has a separate call. If a fire occurs outside of the borough, there is a special call to designate this. The location of these calls is telephoned to the headquarters of the chemical company from the central station. The men do not call the telephone operator for information unless they are in doubt, such as when a fire occurs in an outlying district.

Immediately after the alarm is blown from the central telephone office, the operator opens all lines for a period of three minutes and continuously tells the location of the fire. We find this helps to avoid delays.



Inside of New Fire Alarm Headquarters Just Completed in Sioux City, Ia.

A new Gamewell fire alarm system has just been installed with the box line boards shown directly in back of the recording sets. Sioux City has a population of 82,000 and has a fire area of forty-four acres. The equipment consists of one 20-circuit protector board, one 20-circuit box line relay board, two 10-circuit storage battery switchboards, one 14-circuit semi-automatic repeater, one marble repeater switching panel, a recording group consisting of fourteen open circuit registers and fourteen take up reels, a recording and transmitting set, a low current indicating panel, five hundred battery cells together with battery racks.

J. J. Wolever, Chief, Fredonia, Kans.: We use a siren and also the telephone for summoning the men. Members of the department having a telephone either at home or place of business are notified simultaneously by central by pushing a button and repeating the street and number. This has proved very satisfactory. The firemen very seldom have to call central. Even if they did, it would be almost impossible to get the information due to the fact that the telephone office is congested with more calls than can be answered for a few minutes after the siren is sounded. I believe this condition exists in most towns of this size.

R. W. Van Tassel, Chief, Lindale, Ga.: We use an electric whistle that blows the number of the box. We also have printed cards giving the numbers of the different boxes. The box numbers run from four to fifty-two. However, no single number is higher than seven. The town is divided as follows: All numbers up to seven are in the mill yard; numbers in the twenties are on the south side of town; in the thirties on the north side; in the forties on the east side, and the numbers in the fifties are on the west side of town. In this way, when an alarm is sounded the men know the general direction of the fire and can respond without delay.

E. G. McGill, Chief, Sparta, Ill.: We use an electric siren. When the siren blows, all the men come to the engine house where we have two trucks. The first truck leaves with the first four men to arrive. The second truck waits for late comers.

When a fire occurs at night, the policeman on duty opens the doors of the engine house and starts the apparatus. He then secures the information from central as to where the fire is. After securing this, the policeman stands in front of the engine house and as the firemen arrive the information is given to them. No one else is given this information. The telephone company does not answer calls until they hear the siren on the apparatus which is not blown until we leave the engine house.

Jos. Achter, Chief, Glenwood, Minn.: We use a siren which can be operated from the fire house and also from the local telephone office. When the siren is blown, it is understood that the first man to arrive at the engine house is to call the operator and get the location of the fire.

Congestion is avoided by the operators not giving information unless the call comes from the fire house. However, as Chief, I can by identifying myself, secure this information from any telephone.

G. W. Thorpe, Chief, Cheshire, Conn.: We use a siren as a fire alarm. The firemen call the telephone operator for the location. The whistle at the power house and light plant is also blown as a general alarm. This whistle blows a sufficient number of times to correspond with the location of the fire.

This Fire Was Set to Obtain Realistic Pictures
During the filming of the motion picture "Evangeline" near Point Lobos, Cal., several houses were ignited so that some realistic scenes might be obtained. The "damage" was estimated at $100,000. Several society people acted as extras in this expensive movie fire.

We have very little trouble with congestion at the telephone office. However, to avoid congestion, I would suggest that numbers be given to the different districts so that when the siren is blown a certain number of times, the location of the fire can thereby be determined by the men.

T. L. Newborn, College Park, Ga.: We use a siren for calling out the men. The town is divided into districts, each district having a different signal. In case of fire, the siren blows the signal for the district in which the fire is burning. This gives the men the general location.

Our department consists of ten volunteer men and two regular paid men. One of these paid men is assigned to day duty and the other to night duty.

Frank Palm, Chief, Detroit, Minn.: We have a fire whistle that gives the ward in which the fire has started. For explicit information, the men call the local telephone operator. Operators are instructed not to answer calls unless they are received from the residences of firemen. This rule applies to a set length of time after the whistle is blown.

Melvin Coulter, Chief, Holbrook, Mass.: This town is equipped with an up-to-date Gamewell fire alarm system. Call firemen are equipped with tappers. The boxes are pulled from the street or the alarm sent out from the central fire station. The sirens on the apparatus are only sounded at corners where traffic is congested.

Our men do not call the local telephone office for information regarding fires.

In answer to your third question, I would suggest a code signal for districts if there were no signal boxes on the streets.

Geo. F. Adams, Chief, Exeter, N. H.: We have a compressed air service whistle connected to a Gamewell fire alarm system. Boxes are distributed throughout the town. We have found this system very satisfactory.

It is not necessary for the men to call central. The telephone is only used in case a piece of apparatus for a chimney or brush fire, or for an out of town call.

As to the third question, I would suggest that where the telephone system becomes congested, an automobile be sent out to pick up the men in order to get them to the blaze.

H. M. Serle, Chief, Fairmont, Minn.: We have a whistle which sounds the ward to which the department is to respond. When the whistle blows, the men call central for information. Everyone of our men have a phone and his number is marked in red on the switchboard at the telephone office. This enables the operator to give these calls preference. Private individuals are requested not to call central for three minutes after an alarm has sounded.

John J. Smith, Secty., Gallup, N. Mex.: The fire siren blows the ward number. This enables the men to know where to go.

Geo. W. Sheets, Chief, South Sioux City, Ia.: Firemen are called out by telephone from headquarters. We have a switchboard and one man is stationed there to answer all telephone calls. We have an automatic system at the central office. For this reason men cannot call there for information.

Wm. R. Green, Chief, Canton, Ga.: We use the telephone to call out firemen. If necessary, the men call the local telephone office for information.

I would suggest that for towns of our size, the town be divided into zones. Then after the whistle has given the general alarm, the number corresponding to the zone should be blown. This, to my mind, is the quickest way of getting the men to know the fire location.

O. F. Schreffler, Chief, Watseka, Ill.: When a fire call is received, the telephone operator calls me and then turns on the siren. All the firemen respond to the fire house. I direct them from that point. If I am not there when the first man arrives, he immediately secures the necessary information and directs the rest of the men.

C. Edwards, Chief, Quincy, Ill.: We use a Gamewell fire alarm system. The bells strike the number of the box from which the alarm is being sent. All the men know the numbers and the location of the boxes. By counting the number of times the bell rings, they know where to go.

W. W. Walker, Chief, Summit, Ill.: We employ a siren for

calling out the men. When the telephone operator receives a call, she immediately notifies the engineer on duty. After waiting three or four minutes the apparatus then proceeds to the fire and the men are picked up on the way.

If necessary, the men call the local telephone operator for information. To avoid congestion, the operators are instructed not to give information to anyone except members of the department. Firemen calling the operator have to identify themselves by giving their names.

R. R. Davis, Chief, Fullerton, Cal.: The men respond to the fire house where they can find the location of the fire on the bulletin board. It is very seldom necessary to call the telephone headquarters for information.

I believe congestion at telephone headquarters can be avoided by educating the public to the fact that they must not call central during a fire alarm.

We formerly used an old air whistle, and blew the number of the ward. We now have an electric motor for the whistle. Instead of blowing the ward number, which I believe took too much time, we leave the switch on. In this way the siren blows continuously until the off shift men arrive and shut it off.

W. Boggia, Chief, Leonia, N. J.: When the siren blows, our men call the police sergeant at the desk for the location of the fire. There are twenty-five direct lines to the police station throughout the town. The police and fire departments are in the same building. All the phones are hooked up on one circuit. When the sergeant is giving directions, anyone on this circuit can hear this information.

J. C. Williamson, Chief, Pikeville, Ky.: This town is divided into zones so that when a fire alarm is sounded, the men know the location of the fire. The local telephone headquarters is only called to report the location of a fire.

Wm. M. Chambers, Chief, Wymore, Neb.: We employ a red switch system at our local telephone office which shows the numbers of the officers and the most active men in red. In this way it is a simple matter for the operator to know whether or not a fireman or an officer is calling. We have eliminated a great deal of delay by using this system.

A. P. Woodward, Chief, Danielson, Conn.: We employ a fire whistle and diaphone with Gamewell fire alarm boxes for calling out firemen. Our men do not call the local telephone headquarters as this is not necessary.

Congestion at the telephone office due to a lot of call and delay in getting men to the fire can be avoided by installing a Gamewell system.

Oscar R. Hutchinson, Chief, Lenox, Mass.: We employ a whistle which sounds the number of the district. This gives the location of the fire. Congestion can be avoided by employing a code system.

C. G. Hawkins, Chief, Georgetown, Ky.: We employ a Gamewell fire alarm system with boxes. Yes, sometimes the men do call the local telephone office for information.

Harry R. Page, Chief, East Haven, Conn.: This town is laid out in districts. We use a Loper fire alarm system with numbers. The telephone is only used to call fire emergency in the event of a fire breaking out.

Chief Groves, Walsenburg, Colo.: We use a siren for calling the men. During the day if the men are in doubt as to the location, they call telephone headquarters. At night the operator calls all the firemen before answering any other incoming calls.

Ohio Chiefs Hold Convention

(*Continued from page* 554)

of Fire Underwriters. He told how the model arson law, which has been recently put into force in Ohio, will operate, and he pointed out its many advantages in respect to the old law.

Following these talks, business matters were transacted. Chief Robert Leedom of Portsmouth was elected president; Chief John A. Crogg, Tiffin, first vice-president; Chief ward J. Green, Steubenville, second vice-president; Chief Philip J. Harty, Youngston Sheet and Tube Company, Youngstown, secretary-treasurer. The next convention will be held in Portsmouth.

Eastern Chiefs to Meet in New York

The second annual convention of the Eastern Association of Fire Chiefs, a sectional group of the International Association of Fire Chiefs, will be held at the Hotel Pennsylvania, New York City, July 11-12.

Many papers will be presented—"Fire Department Cooperation in Time of Fire—Prearranged Signals and Previous Arrangement for Response," "Ventilation of all Classes of Buildings at Times of Fire," "Care and Operation of Pumpers," and a round table session presided over by Chief John Kenlon of the New York Fire Department.

In addition there will be a special drill at the New York Training School, and practical demonstrations of resuscitation. C. W. Greenfield of Arlington, N. J., is president of the association, and T. Howell Johnson, Chamber of Commerce Building, Newark, N. J., is secretary.

Overcoming Fires in Coal Piles

Those who have had experience in fighting fires in large piles of coal know that throwing water on the top of the coal has little effect. The water must be forced to the seat of the blaze so that it will not pass away in the form of vapor. A writer in *Power* describes the following tool that he has found useful in fighting coal fires.

He took a piece of 2½-inch pipe, twelve feet long, pointed at one end and screwed to a tee on the other. A capped nipple was screwed into the other end of the tee and the side outlet served as a hose connection. The pipe was slotted from the point for about five feet. The slots were made one-eighth inch wide and about six inches long. Short bridges of metal were

Pipe Nozzle That Is Forced Through the Coal Pile

left between them to give strength and to maintain the shape of the pipe, as illustrated.

When the coal was found gassing or burning, this pipe was forced through the pile into the fire, the hose connected and water turned on. With this device, the gassing of coal in the piles was stopped and the fires extinguished with little water.

How a Salvage Corps Works

(*Continued from page* 548)

the occupants of buildings damaged by fire as well as to the owners of the property:

Notice to Sufferers by Fire

The Worcester Protective Department wishes to advise that it is not necessary to employ a paid representative to collect claims for loss against Insurance Companies. Parties suffering loss by fire are particularly cautioned for their own safety not to make agreements or sign papers relating to such loss, until they have conferred with the office of the Company insuring them. By complying with this advice, the property owner may save much trouble and expense.

Property owners are further advised that all insurance policy contracts carry the following clause:

"If the insured property shall be exposed to loss or damage by fire, the assured shall make all reasonable exertion to save and protect same. It is moreover understood that there can be no abandonment of the property insured to the Company and that the Company shall not in any case be liable for more than the sum insured with interest thereon at the time the loss shall become payable, as above provided."

Worcester Protective Department
Fire Patrol 57 Exchange Street

The photographs accompanying this article show the manner of spreading covers in various classes of occupancy and give a good idea of the satisfactory results obtained. These pictures were especially taken for Superintendent Guertin and are both unusual and remarkable. They have much clearness of detail and show the work of the patrol to good advantage.

NEW STANDPIPE RULES ADOPTED FOR THE CITY OF NEW YORK

Board of Standards and Appeals Formulates New Regulations—To Be Published in Their Entirety in These Columns

HEREWITH is continued from the June 12 issue the new "Standpipe-Fire Line Rules" of New York City. The original rules were adopted by the Board of Standards and Appeals of that city on June 22, 1922, were amended July 20, 1923, and again on May 18, 1928. The finally adopted form as reproduced herewith, was adopted July 20, 1928. Through the courtesy of Chairman William E. Walsh, of the Board, FIRE ENGINEERING *is enabled to publish the entire new rules serially.*

These new rules or formulated largely through the efforts of Peter J. Maher, Fire Preventive Inspector attached to the Division of Fire Appliances of the New York Fire Department.

RULE 90. MONITOR NOZZLE.—Monitor nozzles shall be so constructed and designed that they may be moved in both vertical and horizontal arcs, and shall be so located that streams may be brought to bear on all portions of the plant or building within the effective radius of stream play and such other exposing properties as may be within this radius. They shall be supplied from connections to the standpipe system not less than 6 in. in diameter with remote control.

RULE 90a. ROOF SETBACK HOSE OUTLETS.—A two-way hose-outlet tee, with one outlet properly capped, shall be provided in the standpipe risers on floor level of any intermediate roof setbacks on all buildings exceeding one hundred feet in height when the following conditions exist:

1. When the building has a frontage of fifty feet or over.
2. And there are adjoining roofs, window openings or other exterior exposures within fifty feet of the roof parapet.
3. And the depth of the setback exceeds ten feet.
4. And the setback exceeds one hundred feet above grade level.

RULE 91. EXISTING STANDPIPES.—Standpipe fire line equipments which were approved by the Fire Commissioner as conforming to the rules and regulations then being enforced, shall not be required to be altered to conform to the provisions of these rules, except where substantial additions or extension in height or area is made to the building, when these rules shall apply if deemed advisable or necessary by the Fire Commissioner, and except that all such fire line systems shall have or be provided with the following:

1. Roof gravity tank shall have a reserve of approximately 3,500 gallons of water for fire line.
2. The bottom of the gravity tank shall be not less than 20 feet above the hose outlet in the highest story.
3. A 4-inch emergency drain with gate valve.
4. House lines taken from outside of tank.
5. Tank properly heated and provided with overflow line.
6. Tank shall not be fed through fire line.
7. Tank to be fed not less than 65 gallons a minute by pump or direct city connection.
8. An iron ladder of substantial construction, properly braced, extending to top of tank.
9. At least one gate valve at the downstream side of tank check unless a gate valve has been installed on either side of check.
10. Hose valves and hose not less than 2½ inches in good serviceable condition. No automatic hose valves permitted.
11. Wheel of hose valve within 6 ft. 6 in. of stair landing or steps within 2 ft.
12. An open or automatic ball drip between the siamese check and siamese.
13. Approved 3 in. x 3 in. siamese, with approved caps.
14. The words "STANDPIPE" cast in the body of the valve, or on metal plates secured to siamese riser, or secured to face of building behind the siamese.
15. The siamese street riser, wall collars and caps painted a Fire Department red.
16. Outlet pressure reducers on all hose outlet valves where the pressure exceeds 50 lbs. per square inch.
17. In factory or other buildings of hazardous use, where the fire lines are not within a protected stair enclosure and may be subjected to fire exposure because of such location, they shall be protected by asbestos covering, wire lath and cement, or terra cotta blocks as described in these rules.
18. Fire lines shall be protected from freezing as specified in these rules.
19. The tank shall be provided with a high and low water electric alarm, except where there is an automatic filling pump installed.
20. The bonnets or caps of all siamese or tank check valves which have been in the fire lines for at least ten years, where practicable, shall be removed and the interior of valve cleaned of all rust or other accumulations. The body of the valve shall then be given a good coat of red lead and linseed oil.

(To be continued)

Matches Art Still Attractive to Rats

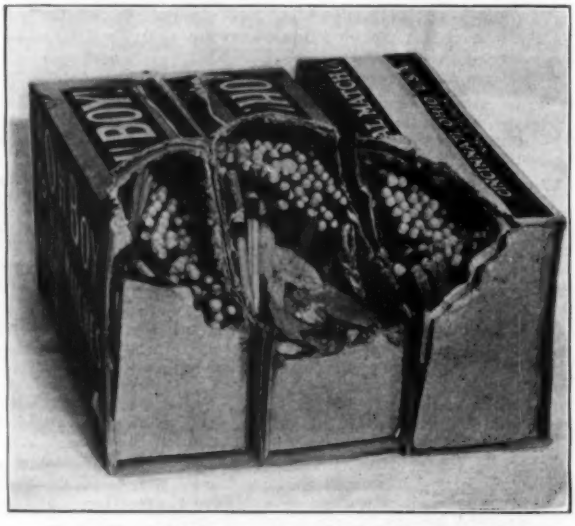
Akin to the ancient query as to why a chicken crossed the road is the time-old and much debated question as to whether rats or mice gnaw matches and thus start fires. Even though tests are made under conditions which scientists believe are homelike for the rodents, once in a while something occurs that upsets all the theories and data gained in the course of considerable laboratory work. So too in this instance.

Only automatic sprinkler protection prevented the entire destruction of a warehouse in Little Rock, Ark., from causes that clearly indicate that rats were the agents.

After the fire, an investigation was conducted by the engineering division of the Arkansas Fire Prevention Bureau. The searchers found that a number of rats had sought to make their winter quarters in cases of matches. The photograph clearly indicates the incendiary tactics of the rats that had gnawed up boxes, matches, cardboard and paper with which to build the nests. Evidently the rodents were not versed in the elements of fireproof construction.

In commenting on the incident *Safeguarding Arkansas Against Fire* states:

"They (rats) start fires, so don't allow arguments to the



What Else Besides Rats Could Have Caused This?

contrary to deceive you. Take every precaution to keep rodents and matches apart. They are too dangerous a fire hazard to be together anywhere.

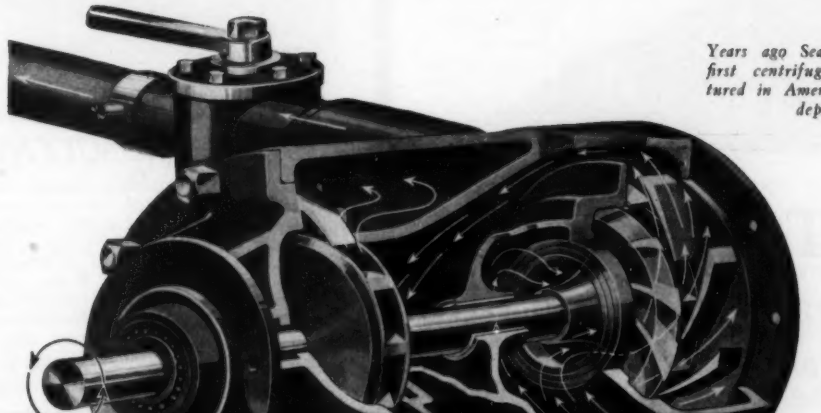
"This bureau, however, does not hold to the idea that rats or mice voluntarily gnaw the sulphurous heads of matches because they are attracted to them by the sulphur or other chemical. But the evidence in the illustration shows that they do gnaw matches, remove them from the boxes and carry them about, at which time dragging or rubbing the match head against any rough surface, on the box or otherwise, may ignite it, as was doubtless the case in this experiment. More than one-third of the matches were removed from the boxes and carried elsewhere by the rodents."

The three boxes were only three of many that were gnawed. Evidence makes one draw the conclusion that rats caused the fire. A dead rat was found dead by these boxes and whether or not poisonous substances from the match heads caused its death is not definitely known.

It seems strange that in a warehouse full of various items, the rats should choose matches, of all things, when fire insurance men have stated that rats would rather starve than exist on such a diet.

Company Formed at Valley Stream, N. Y.—A fire department of forty members has been formed to protect Gibson, a section of Valley Stream, L. I., N. Y. This will make the fifth company in service.

In a Class by Itself



Years ago Seagrave delivered the first centrifugal pump manufactured in America for use by fire departments.

Skill, research, experience and concentrated effort have placed the Centrifugal Pump at its present perfection. In manufacturing Seagrave apparatus we confine our efforts entirely to this one type of pump.

A SINGLE steel shaft of large dimension mounted upon ball bearings, running in lubricant, constitutes the sole friction unit of the "Seagrave Centrifugal Pump."

This pump has no gears, pistons, air-domes, churn-valves, relief-valves or any of the complicated accessories necessary for the operation of Positive Displacement Pumps.

It is obvious that a pump that will do the same amount, or more work, without these attachments, is less liable to need repairs and readjustments.

Seagrave Centrifugal Pumps are guaranteed to deliver their rated capacities for a period of ten years, accidents and abuse excepted.

The SEAGRAVE Corporation

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An actual occurrence in a plant at St. Louis, Mo. (Name on request.)

A. D. T. responds... finds watchman tied up

9 P.M. at a plant in St. Louis, Mo.—the watchman held up and securely tied—the plant without protection and subject to robbery. However, the failure of the watchman to turn in his signal to the A. D. T. Central Station was promptly noted and an A. D. T. Roundsman was rushed to the premises. The burglar was scared away before any plunder was possible.

A. D. T. Watchman's Supervisory Systems are providing positive protection for many plants. Operating through 115 A. D. T. Central offices located throughout the country, they offer a complete and dependable protection service.

Prompt service like this indirectly helps to increase the efficiency of your own fire-fighting organization. For complete protection service, recommend A. D. T.

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Hundreds of Fire Departments have installed H-H INHALATORS for the successful resuscitation of victims of carbon monoxide poisoning, gas asphyxia, electric shock, drowning, etc. The H-H INHALATOR is officially approved by the Association of Police and Fire Surgeons and the American Gas Association. Our representatives will be pleased to arrange a demonstration whenever you say.

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Braddock Ave & Thomas Blvd. Pittsburgh, Pa.

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A Flashing Red Light!

—And Traffic Makes Way for the Fire Department

Down the street rushes the fire department. Traffic must stop—*and it does.* The streets must be cleared—*and they are.* For the Harrington-Seaberg Signal has sounded the warning with its shrill siren blast and flashing red "STOP" light.

Are the congested areas in your city equipped with Harrington-Seaberg Warning Signals? Cities of every size the country over find them incomparable for those quick-action moments that come so unexpectedly.

Sturdy, faultless construction is your guarantee of dependability and durability. Write for descriptive literature.

Our Engineering Staff will be glad to offer suggestions for the solution of your traffic problems.

We also manufacture automatic and hand operated time limit switches to use with the traffic warning signals. Shall we send you detailed information?

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DISTRIBUTORS OF
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Dept. G, MOLINE, ILLINOIS

FIRE DEPARTMENT ACTIVITIES

Ironton, Ohio, to Open Fire Station—A new fire station is to be opened in Ironton, Ohio.

Apparatus Delivered to Bessemer, Pa.—A 450-gallon pumper has been delivered to Bessemer, Pa.

Treadwell Chief of Deertrail, Col.—Pat Treadwell has been elected chief of the department in Deertrail, Col.

Fire Apparatus Delivered to Tupper Lake, N. Y.—New fire apparatus has been delivered to Tupper Lake, N. Y.

Logansport, Ind., Will Have New House—Construction has started on a new fire station for Logansport, Ind.

Utica to Erect New Fire House—Contracts have been awarded for the construction of a fire house in Utica, N. Y.

Glen Cove, N. Y., to Buy Pumper—A 750-gallon pumper will be purchased for Company No. 4 in Glen Cove, N. Y.

Castro Valley, Cal., to Erect Fire House—Plans have been drawn for a new fire station to be erected in Castro Valley, Cal.

Denver, Col., Firemen Seeking Pay Increase—Firemen in Denver, Col., are seeking a pay increase of fifteen dollars a month.

Chief Grenfell on Motor Tour—Chief Edward Grenfell of Portland, Ore., made a three-week motor tour through California.

Chief Niemeyer of Portage, Wis., Resigns—Mayor H. H. Niemeyer of Portage, Wis., has resigned as chief of the fire department.

Fire House Opened in Los Angeles, Cal.—A fire station in the West Adams district of Los Angeles has been placed in service.

Apparatus Delivered to Roland, Ia.—Fire apparatus made by the W. S. Nott Company has been delivered to Roland, Iowa.

Foxboro, Mass., Has Department Dispute—Twenty-six firemen of Foxboro, Mass., have resigned as a result of a political dispute.

Salary of Gloucester, Mass., Chief Increased—The pay of head of the Gloucester, Mass., fire department has been increased to $2,500 a year.

Fireman Hurt in Apparatus Crash—A fireman in Des Moines, Ia., was seriously hurt when a car collided with the rear end of a ladder truck.

Elizabeth, N. J., Buys Pumper—Elizabeth, N. J., has purchased a 900-gallon Seagrave pumper and expects delivery on this in about ninety days.

East Williston, N. Y., Orders Pumper—A 500-gallon Maxim pumper has been sold by the Woodhouse Company to East Williston, L. I., N. Y.

Portland, Me., Has Drill Tower—A drill tower has been erected in the rear of Engine No. 6 in Portland, Me. Lieut. Thomas Murdock will be drill master.

More Firemen Wanted in Akron, Ohio—An effort is being made to add fourteen men to the fire department to man the new apparatus to be placed at Station No. 4.

Lima, O., Against Apparatus Purchase—The measure to issue $13,000 bonds for the purchase of fire apparatus in Lima, Ohio, failed in its third reading in the council.

West Virginia Has District Fire Marshals—To promote the efficiency of the fire marshal's office, West Virginia has been divided into six districts, each in charge of an assistant fire marshal.

Davenport, Ia. Wants Separate Alarm—Chief Kelley of Davenport, Ia., has asked that the fire alarm system be separated from that of the police department and that it be installed in the central fire station.

Fire Department Plans Picnic for Poor—The volunteer fire department of Broughton, Pa., has arranged for a picnic for the poor children. Neighboring firemen are cooperating to make this outing a success.

Waterloo, Ia., Said to Be Undermanned—According to a report issued by the National Board of Fire Underwriters, the fire department of Waterloo, Ia., is undermanned. Two more fire stations were also recommended.

LaPorte, Ind., Dance a Success—More than five hundred persons attended the LaPorte, Ind., fire department dance that was arranged to benefit the firemen's pension fund. Chief and Mrs. Earl J. Reynolds led the grand march.

Fire Losses of U. S., Decrease—According to figures just made public by the Actuarial Bureau of the National Board of Fire Underwriters, fire losses in 1928 for the United States were $472,224,568, or $6,000,000 lower than the figures of 1927.

New Orleans to Have More Lieutenants—The Board of Fire Commissioners of New Orleans, La., authorized the appointment of 108 new lieutenants for the department. Upon their appointment, the double-platoon system will be instituted.

More Men Recommended for Boston—Fire Commissioner Eugene C. Hultman of Boston, Mass., has recommended the appointment of one new deputy chief, thirteen captains, thirty-three lieutenants, seven apparatus operators and fifty-one new firemen.

Amherst, Mass., to Erect Fire House—A fire station costing $40,000 will be erected in Amherst, Mass. Plans were drawn by George Ernest Robinson, architect of Boston. It will be of colonial style architecture to harmonize with other buildings nearby.

Canada Wants to Abolish Nitro-Cellulose Film—The fire marshal's office of the Province of Ontario has made an appeal to the president and officers of all the hospitals and sanitariums in the province urging them to abandon the use of flammable film in X-ray practice.

Malverne, L. I., Chief and Asst. Chief Honored—Townsend H. Ackley, chief of fire department at Malverne, L. I., N. Y., and Theodore Martine, assistant chief, were presented with gold badges by members of the department. The men arranged a chicken dinner in one of the houses.

Tiffin, O., Chief Has Narrow Escape—Chief John A. Grogg of Tiffin, Ohio, narrowly escaped death when he came in contact with an electric wire carrying 2,300 volts. The chief fell after his hand became momentarily paralyzed, so that the injuries were confined to burns on the hand.

Florida Hotels Oppose Fire Alarm Bill—The Florida State Hotel Association and officials of Jacksonville are opposed to a bill that would require hotels, hospitals and public schools in communities where a central fire alarm station is maintained, to have boxes connected with this system. Jacksonville estimates that it would cost the city $150,000 to comply with the proposed law.

Cleveland Hospital Fire Nearly Repeated—Seventeen patients were saved from a fire that swept the General Hospital in Chicago. The fire started in the laundry and did $25,000 damage. An investigation that followed showed that the hospital was careless in its methods of storing X-ray film, and that if the fire had reached the film, the Cleveland Hospital fire might have been repeated.

Green Bay, Wis., Firemen Under Canvas—The Green Bay, Wis., firemen will live in a tent until the fire station now under construction, is completed. The apparatus will be housed in the barns of the Wisconsin Public Service. All alarm boxes will be out of service, and it will be necessary to telephone alarms. Signs reading "Out of Order" were placed on all fire alarm boxes.

T. Alfred Fleming on Chautauqua Circuit—T. Alfred Fleming, in charge of the department of conservation, National Board of Fire Underwriters, will deliver thirty-five lectures before Chautauqua audiences in as many cities. His lecture tour started in West Chester, Pa., June 10, and will end in Chestertown, Md., July 22. Most of the lectures will be in Pennsylvania towns, but he will also visit Massachusetts, Vermont, Connecticut and Maryland.

Two Thousand Firemen to Attend N. Y. Schools—According to Chief Michael J. Fleming of Albany, N. Y., chairman of the committee assisting the Mayors' Conference to establish fire schools, there will be two thousand firemen attending the various schools established in New York. The attendance of schools just held was: Syracuse, 134; Utica, 185; Binghamton, 194 and Elmira, 64. Seven of the fourteen zones are now in operation.

PROPOSED IMPROVEMENTS

Alabama, Genesee Co., N. Y.—Reports state Alabama Fire Co. voted to erect new fire station at recent meeting.

Cicero, Onondaga Co., N. Y.—Reports state fire department planning to purchase new pumper with chemical equipment. G. L. Bitz, Chief.

East Liverpool, Columbiana Co., Ohio—Ordinance passed authorizing the issuance of $60,000 in bonds for erection of proposed new Central fire station. Ralph C. Benedum, Mayor.

Position Wanted

Former Ass't fire chief, mechanic and fire alarm man wants position in southern state; address Experience, 210 DeKalb St., W. Philadelphia, Pa.

For Sale

Full equipment of Seagrave City Service Truck. Two 35 gallon chemical tanks, Hose, Reel, 225 foot Ladders, Poles, Axes, etc., Whole or part, all in good condition. For particulars apply to: Frank L. Kramer, Sec., Lambertville, N. J. 6-12,26

Wanted

One or two Electrene extinguishers in serviceable condition. Pay cash or exchange a new modern extinguisher for this old obsolete type. James M. Castle, Inc., 508 Bailey Warehouse, Philadelphia, Pa. 6-26

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What Have You?

Well-known maker of fire equipment is interested in adding to his line of manufacture an article or articles that can be sold to fire departments and municipalities.

Would be willing to buy such articles outright or manufacture and sell on a royalty basis.

Company has a long successful record, excellent manufacturing facilities, and a well established selling organization.

All propositions submitted will be treated in confidence. Address: Box 170, c/o FIRE ENGINEERING, 225 W. 34th St., New York City. 6-12, 26-7, 10.

CONVENTION DATES

June 21-July 7—INTERNATIONAL EXHIBITION OF FIRE APPARATUS AND CONGRESS OF WORLD FIRE PREVENTIONISTS. Under the patronage of the President of the French Republic, at the Grand Palais, Paris; 44th Annual Congress of the French Federation, Paris. General Secretary. Commandant G. Wattremez, Grand Palais, Avenue Alexandre III, Paris.

June 24-28—AMERICAN WATER WORKS ASSOCIATION. 49th Convention, Hotel Royal York, Toronto, Ont., Can. Secretary, Beekman C. Little, Rochester, N. Y. Office of Association, 29 West 39th Street, New York City.

June 25-27—NEW ENGLAND ASSOCIATION OF FIRE CHIEFS. 7th Annual Convention, Hotel Taft, New Haven, Conn. Exhibits, Second Regiment Armory. Secretary-Treasurer, Chief John W. O'Hearn, Watertown, Mass.; Chairman, Exhibits, Chief John S. Pachl, Annex Fire Department, New Haven; Traffic Manager, Geo. F. Cobb, Boston.

June 25-28—SOUTH DAKOTA FIREMEN'S ASSOCIATION. 13th Annual Convention, and Tournament, Hot Springs, S. Dak. Secretary, M. C. Sullivan, Parkston, S. Dak.

July 3-4—WYOMING STATE FIREMEN'S ASSOCIATION. 3rd Annual Convention, and Tournament, Laramie, Wyo. Secretary, Chief Justin H. Patrick, Laramie, Wyo.

July 4-5—ASSOCIATION OF CANADIAN FIRE MARSHALS and DOMINION FIRE PREVENTION ASSOCIATION. Annual Conventions, Ottawa, Can.

July 9-11—MICHIGAN STATE FIREMEN'S ASSOCIATION. 55th Annual Convention, Sault Ste. Marie, Mich. Secretary, H. L. William, Ludington, Mich.

July 9-12—DOMINION ASSOCIATION OF FIRE CHIEFS. 21st Annual Convention, Coburg, Ont. Secretary, Chief James Armstrong, Kingston, Ont.

July 10-11—DELAWARE VOLUNTEER FIREMEN'S ASSOCIATION. 9th Annual Convention, Wilmington, Del. Secretary, Sam H. Carson, Dover, Del.

July 11-12—EASTERN ASSOCIATION OF FIRE CHIEFS. (Change of date.) 2nd Annual Convention, Hotel Pennsylvania, New York City. Secretary, T. Howell Johnson, Room 602, Chamber of Commerce Bldg., Newark, N. J.

July 15-16—MONTANA STATE FIREMEN'S ASSOCIATION. 37th Annual Convention, Butte, Mont. Secretary-Treasurer, D. E. Moser, Bozeman, Mont.

July 15-19—NORTH CAROLINA STATE FIREMEN'S ASSOCIATION. Annual Convention, Hendersonville, N. C. Secretary, John L. Miller, Concord, N. C.

July 15-20—MARITIME FIRE CHIEFS' CONVENTION AND TOURNAMENT. 14th Annual Convention, Moncton, N. B. Secretary, Captain K. J. McCREA, St. John, N. B., Can.

July 17-19—INDIANA FIREMEN'S ASSOCIATION. 12th Annual Convention, Gary, Ind. Secretary, Clem Smith, Fire Headquarters, Terre Haute, Ind.

July 23-26—PACIFIC COAST ASSOCIATION OF FIRE CHIEFS. 36th Annual Convention, Vancouver Hotel, Vancouver, B. C. Secretary, Jay W. Stevens, 113 Merchants Exchange Bldg., San Francisco, Cal.

August—IDAHO FIREMEN'S CONVENTION. Tentative, August or September, Idaho Falls, Ia. Secretary-Treasurer, Earl Heath, Idaho Falls.

August—MAINE STATE FIREMEN'S ASSOCIATION. 2nd Annual Convention (tentative, exact time to be announced later), Waterville, Me. Secretary, Earl E. Pratt, Fire Department, Auburn, Me.

Aug. 7-9—CALIFORNIA STATE FIREMEN'S ASSOCIATION. 7th Annual Convention, Fullerton, Cal. Secretary-Treasurer, H. E. Strasser, 1171 Tenth St., San Diego, Cal.

Aug. 7-9—SOUTHWESTERN ASSOCIATION OF VOLUNTEER FIREMEN OF NEW YORK. Annual Convention, Falconer, N. Y. Secretary, Royce Alden, Falconer, N. Y.

Aug. 12-14—UTAH STATE FIREMEN'S ASSOCIATION. 22nd Annual Convention, Tooele City, Utah, Secretary, Harris E. Anderson, Fire Headquarters, Salt Lake City, Utah.

Aug. 16-17—CONNECTICUT STATE FIREMEN'S ASSOCIATION. 46th Annual Convention, Plaza Theatre, East Hartford, Conn. Secretary D. W. Hartford, South Norwalk.

Aug. 20-23—FIREMEN'S ASSOCIATION STATE OF NEW YORK 57th Annual Convention, Saranac Lake, N. Y. Secretary, Fred A. Davis, Fort Edward, N. Y.

Aug. 26-28—NEW MEXICO STATE FIREMEN'S ASSOCIATION. 7th Annual Convention, Gallup, N. M. Secretary-Treasurer, Theodore A. Rosenwald, Albuquerque, N. M.

Aug. 28-30—VIRGINIA STATE FIREMEN'S ASSOCIATION. 43rd Annual Convention, Lexington, Va. Secretary, E. K. Landis, Pulaski, Va.

Sept. 3-5—KENTUCKY STATE FIREMEN'S ASSOCIATION. 1st Annual Convention, Ashland, Ky. Secretary, Captain S. G. Render, 303 Speed Bldg., Louisville, Ky.

Sept. 9-11—ARKANSAS STATE FIREMEN'S ASSOCIATION. 8th Annual Convention, Camden, Ark. Secretary-Treasurer, H. D. Compton, Central Fire Station, Little Rock, Ark.

Sept. 10-12—ILLINOIS FIREMEN'S ASSOCIATION. 42nd Annual Convention, Joliet, Ill. Secretary, Assistant Chief Roy W. Alsip, Fire Department, Champaign, Ill.

Sept. 17-18—IOWA STATE FIREMEN'S ASSOCIATION. 52nd Annual Convention, Red Oak, Ia. Secretary, E. E. Parsons, Marion, Ia.

Sept. 18-19—MISSOURI ASSOCIATION OF FIRE FIGHTERS (Consolidated with former Missouri State Association of Fire Chiefs). Annual Convention, Jefferson City, Mo. Secretary, M. J. Mulvoy, 3500 S. Grand Boulevard, St. Louis, Mo.

Sept. 19-22—LOUSIANA STATE FIREMEN'S ASSOCIATION. 24th Annual Convention, Jennings, La. Secretary, Chief A. J. Bethancourt, Houma, La.

Sept. 20-21—NEW JERSEY STATE FIREMEN'S ASSOCIATION. 52nd Annual Convention, Atlantic City, N. J. (Tentative date, to be definitely set later by Executive Committee). Secretary, William Exall, Room 602, Chamber of Commerce Bldg., Newark, N. J.

Oct. 1-3—FIREMEN'S ASSOCIATION OF THE STATE OF PENNSYLVANIA. 50th Annual Convention, Hotel Roosevelt, Pittsburgh, Pa. Secretary, Charles E. Clark, P. O. Box 217, Wayne, Pa.

Oct. 15-17—RAILWAY FIRE PROTECTION ASSOCIATION. Annual Meeting, Toronto, Can., Secretary-Treasurer, R. R. Hackett, Baltimore & Ohio Railroad, Baltimore, Md.

Oct. 22-25—INTERNATIONAL ASSOCIATION OF FIRE CHIEFS. 57th Annual Convention, Hotel Tutweiler, Birmingham, Ala. Exhibits City Auditorium. Recording Secretary, Chief James J. Mulcahey, Yonkers, N. Y.; Executive Secretary, Jay W. Stevens, 113 Merchants Exchange Bldg., San Francisco, Cal.; Chairman, Exhibit Committee, Chief Selden R. Allen, Brookline, Mass.

Portland, Ore., Observes Anniversary—Firemen and old fire buffs gathered at a dinner to observe the twenty-fifth anniversary of the Portland, Ore., fire department on a full-paid basis. Commissioner Bigelow acted as toastmaster. The visitors included Jay W. Stevens, fire marshal of California, and Tom Graham, chief of Corvallis, Wash. The group paid a tribute to the memory of the late chief, David Campbell, as well as to two other chiefs who have died.

Egyptian Fire Fighters Hold Convention—Sixty chiefs and two hundred delegates attended the annual convention of the Egyptian Fire Fighters Association held in Lawrenceville, Ill. The men were taken on an inspection trip through the Indian Refining Company plant.

Three Students Hurt in Normal School Fire

Three students were injured and several escaped with minor injuries when a blaze of undetermined origin swept the Normal School at Plattsburg, N. Y. Trapped by flames in a corridor and by locked doors in another, a teacher succeeded in rescuing six students by dropping them from second story windows. Only parts of the walls were left standing.

Buffalo Type 50—500 Gallon Pumper

Buffalo Pumpers are the most highly developed in design, construction and engineering standards and are intended for municipality, community and township fire protection.

Buffalo Pumpers are also noted for their efficiency and their great abundance of reserve power. They are pumpers with stamina and speed. All the above have to be credited for bringing great pumping merits for Buffalo Pumpers.

Buffalo Pumpers are given great and careful attention when under construction at our factory by engineers, both mechanical and designing, who have been in contact with the construction of pumpers for years.

Buffalo Pumpers range from 300 gallon capacity to 1000 gallon capacity.

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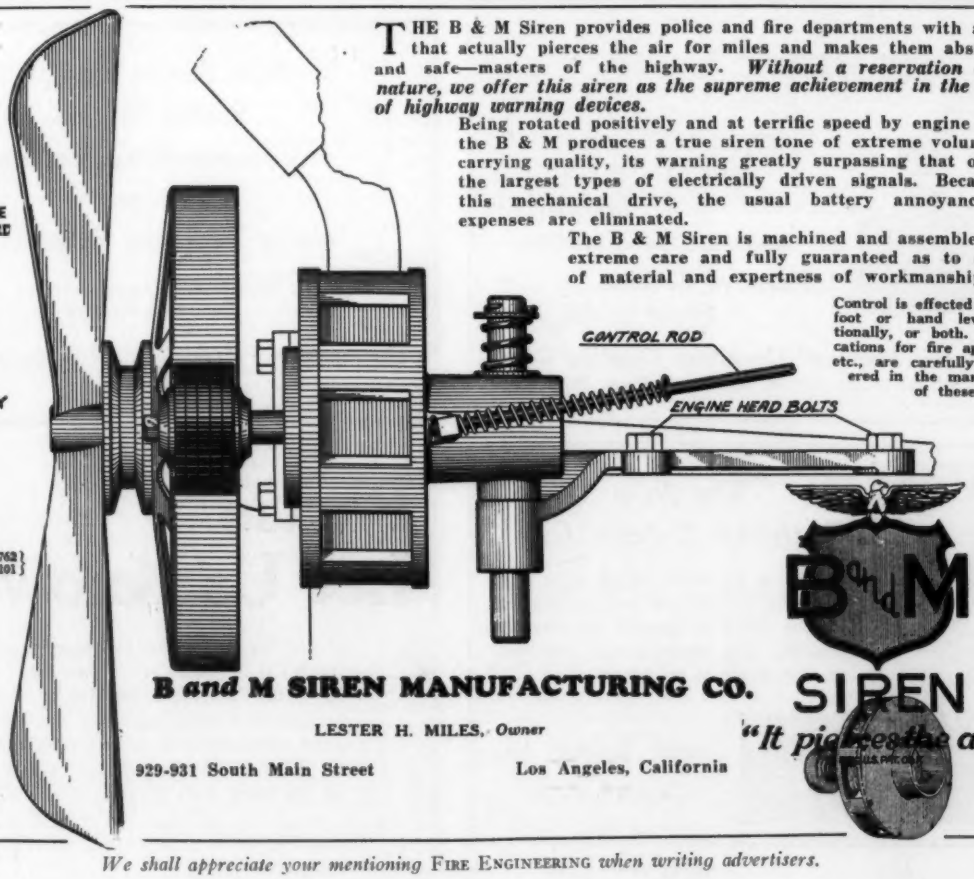

THE B & M Siren provides police and fire departments with a voice that actually pierces the air for miles and makes them absolute—and safe—masters of the highway. *Without a reservation of any nature, we offer this siren as the supreme achievement in the design of highway warning devices.*

Being rotated positively and at terrific speed by engine power, the B & M produces a true siren tone of extreme volume and carrying quality, its warning greatly surpassing that of even the largest types of electrically driven signals. Because of this mechanical drive, the usual battery annoyance and expenses are eliminated.

The B & M Siren is machined and assembled with extreme care and fully guaranteed as to quality of material and expertness of workmanship.

Control is effected through foot or hand levers optionally, or both. Specifications for fire apparatus, etc., are carefully considered in the manufacture of these signals.

B and M SIREN MANUFACTURING CO.

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"It pierces the air"

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Founded 1824 by Jacob Reed

FIREMEN'S UNIFORMS

Thoroughly tailored of especially selected fabrics. Uniforms that look well, wear well and that will give entirely satisfactory service.

Reed's Uniforms are most economical because they represent full value for the amount expended.

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Our general line of equipment includes every fire department supply of merit.

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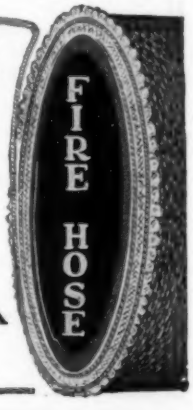

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Any size hard suction

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Union Water Meter Co., Worcester, Mass.
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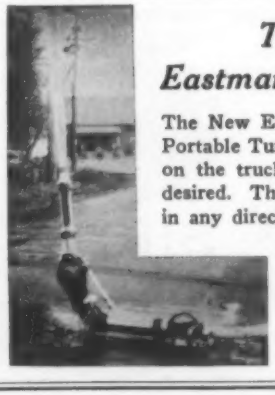

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if you fail to find in our advertising pages any items that you are interested in. FIRE ENGINEERING stands ready to put you in touch with manufacturers of anything you may need, either now or in the future. 225 W. 34th St., N. Y. C., will reach us. A card will do to let us know your wants.

OF INTEREST TO VOLUNTEER FIRE DEPARTMENTS

VOLUNTEER FIREMEN MUST SELECT PROPER LEADER

Some Departments Frequently Handicapped by Frequent Changes in Chief—Public Must Be Made Concious of Their Fire Department

By LOUIS C. BEUTLER

THE nation consists, not alone of cities, but of thousands of towns and villages that are dependent upon the vigilance of volunteer fire departments for a continuance of their prosperity. The spirit that motivates the activities of the volunteer fire fighter differs naturally from those who are paid for their work. The volunteer renders an unselfish service for his community. Although his work shows no return or compensation, and there may perhaps be an utter lack of appreciation, yet, at the sounding of the gong or siren, regardless of weather conditions, or the time of the day, the volunteer is ready for duty. There are various factors that contribute toward the success of a volunteer fire department.

It seems hardly necessary to stress the great importance of selecting one for a leader who is recognized as a man capable of issuing and enforcing orders. He should be a man that will be respected. The fact that he may issue orders at a fire to others who are his co-workers in normal course of events, should not carry a counteracting influence against the feeling of obedience and respect. In many of the smaller departments, there appears to prevail a degree of resentment by members of the department against authority on the part of the chief. Everyone apparently wants to be the boss, with the result that there is often no order, no methods, and a lack of complete success in combatting the fire. This brings about another evil which is too common, and that is the changing of the chief or commanding officer. This is a most unwise procedure and necessitates the education of the new chief until he is entirely familiar with his duties.

In the volunteer fire department there are abundant possibilities for social growth, and the introduction of a fraternal spirit. This friendly spirit can be developed by regular periodical meetings at which interesting topics are brought up for discussion, and social activities that will hold the men together. In addition, there should be inaugurated competitive activities in the form of drills, which will assist in forging the fraternal bonds.

Larger city methods should be given some thought and study to acquaint members with the best practices that are in current use. Subscription to some of the outstanding fire fighting periodicals distributed about the fire station or meeting hall, have many indirect benefits. It is generally appreciated and acknowledged that it is lack of opportunity in actual fire fighting that has depreciated interest in some departments. The only remedy is to introduce some other activities that would serve as a substitute. The feeling of pride, too, is of importance. It is therefore obvious that equipment commensurate with the extent of the community and an adequate and attractive quarters or meeting place must be provided. It is certain that a town with a few hand drawn hose reels and some minor equipment is not of the proper type to compel a community to think of their fire department as a progressive and up-to-date organization. There is hardly a community throughout the nation, where, given the proper incentive and a thorough acquaintance with the fundamental principals, that could not organize a good volunteer department to protect a township.

The town must be willing to support the fire department, both morally and financially. The education of the inhabitants with regard to the importance and significance of fire protection, would tend to assist in securing the desired aid. Such assistance may be obtained by interest developed through talks given by the fire chief or his assistant at public meetings and also in the local schools. Occasional inspections by the fire department tend to bridge the gap that often exists between the volunteer organization and the average resident. When those living in a town become conscious of the volunteer fire fighters who have banded together to protect the property in their community, a long step will be taken in the reduction of the tremendous fire waste.

Oil Explosion Causes $500,000 Damage

Two men were killed, one the son of the fire chief, in a fire that swept the Sun Oil Company plant at Marcus Hook, near Chester, Pa. Three others were burned severely and many received minor injuries.

The still which exploded was filled with cured oil in the process of "cracking-up" into gasoline and the other by-products that are obtained by refining. The fire spread to eight nearby tanks filled with lubricating and crude oils. Three other stills on the Delaware River side of the plant also caught on fire.

The damage amounted to $500,000. The loss would have been much greater if employees had not drained the contents of other stills and turned steam lines into them.

Companies responded from Marcus Hook, Chester, Trainer, Boothwyn, Linwood, Chester Township, Parkside, Brookhaven and several Delaware towns. The shock of the blast was felt in Pennsylvania, New Jersey and Delaware. At the time of the fire, there were five hundred employees in the plant.

Fighting the Oil Blaze at the Plant of the Sun Oil Company

Although he knew that his son had been burned to death in fighting the fire, the night superintendent of the Sun Oil Co. refused to leave the scene of the fire until the blaze was under control. The cause for the fire is unknown.

EDWARD H. SPRANGERS.

Waverly, N. Y., to Entertain Firemen—Waverly, N. Y., is to be host to Central New York Volunteer Firemen's Association convention some time in July.

Pumper Delivered to Battle Creek, Mich.—A pumping engine purchased for $13,000 has been delivered to Battle Creek, Mich.

County Department Abolished—The Salt Lake county fire department near Salt Lake, Utah, has been abolished in the interests of economy.

Wisconsin to Have Firemen's School—Fifty Wisconsin cities will send representatives to the first annual short course for firemen that will be held under the auspices of the extension division of the University of Wisconsin. The short course will be held from June 25-28.

Many Ohio Towns Buy Apparatus—The Prospect Fire Engine Co. reports fire apparatus orders from the following Ohio communities: Arlington, Bradner, Dalton, LeRoy, Lewisburg, Milan, Ney, Perrysburg, Plymouth, Spencer, Upper Sandusky, Waverly and Winchester.

FALSE ALARMS

Drawing by "Art" Espey

Venting the Rear

TRUE TO TRADITION

Following the meeting near the Great Lakes, a party migrated into Canada for an unrestricted good time. There they bought several trinkets for friends, but were asked to pay duty at the United States border.

"Gee, you don't expect me to pay eighty-three dollars on that? What an outrage."

To which the officer replied, "Merely an old U. S. custom."

We are reminded of an example of 1929 generosity—the girl who prayed, "Dear Lord, I don't ask anything for myself—just give Mother a son-in-law."

NOT THE ONE

All pumpers were taken to the nearby piers for the annual apparatus tests. Late in the afternoon, some of the units were ordered back to quarters and a mechanic was gathering up the scattered tools. A lounger on the docks called out:

"Hey, mister, did you lose a wrench?"

The mechanic glanced around and then replied, "Yes."

"What's your name?"

"Mike Connors."

"Well this wrench belongs to Pat Pending. His name is on it."

Some one has discovered that a girl who works does not ruin her chance of getting a husband. This is particularly true of a girl who works fast.

TURN ABOUT

Another pay day had come around and several more days went merrily by without Cassidy paying his debt to Lefferts. In the evening, the two men met in the recreation room.

"Look here, Cassidy, I've already asked you five times for the money that you owe me."

"Remember, Lefferts, how many times I had to ask you before you lent it to me.

When it came to reducing, she was a poor loser.

NOT NOTICED

A new arrival in a western town started to converse with a station lounger while waiting for a cab.

"Tell me, what is the status of the liquor supply around here?"

"Status," mumbled the native, "I dunno what you mean."

"I mean is it easy to obtain liquor and is there much of it around here?"

"Well, mister," drawled the rustic, "all I can tell you is that a little while back they turned off the water supply for a week and nobody knew about it until the town hall caught on fire."

Names may not mean anything but think of the dates that a girl could get if she was known as Miss Conduct.

THE MODERN AGE

An Oklahoma woman had named her two daughters, Gasoline and Kerosene. The old man's name is Pete Roleum. Here is hoping that they grow up a paraffine girls. We want them refined—not crude.

To be absolutely safe, there should be no "sparking" around those girls when they grow up and the dangers of sparks should be taught them while they are doing the growing, in order to avoid explosions.

From Chicago comes word that they have the largest garbage plant in the world, and that they're going to let the people know it.

THE COMPLIMENT

Dickson was chief of a department where money was a most difficult thing to obtain. He was showing the fire apparatus to a friend who called at the fire house.

The chief asked, "Now, honestly, you never would have thought that I bought this apparatus second hand, would you?"

The other inspected the apparatus thoughtfully and said:

"Never in my life. I thought you made it yourself."

There are three classes of women—the intellectual, the beautiful and the majority.

NOT AT ALL INTERESTED

Smoking was permitted in the last three rows of seats in the open street car. The car was crowded and a caustic woman passenger was forced to sit in the rear of the car, beside a man who had a cigar in his mouth.

As a matter of courtesy, the man inquired:

"I hope you don't mind my smoking."

The vitriolic person remarked: "No! I don't even care if you burn up."

—Drawing by "Art" Espey

Have You Ever Tried Dancing on Air?

Firemen in one Delaware town are so proud of their new fire hall that they have taken every precaution to prevent the hardwood floor from being scratched or soiled. The local high school had engaged the fire house for its annual prom, but when it came time for the event, the firemen refused to permit dancing for fear of possible damage to the polished floors. However, the dance orchestra was permitted to play and other entertainment was substituted by the disappointed pupils.

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(Reg. U. S. Pat. Off.)
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DOMESTIC
and
HIGH PRESSURE
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The positive waste value.
All operating threads are dry, being above the stuffing-box.
No toggles, no small, quick-wearing parts.
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An easily installed
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VALVES and BOXES
CAST IRON PIPE
Sand-Cast or "Sand-Spun"
FITTINGS

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That's why he chose a STERLING No. 12 SIREN

When a new car was purchased for Chief Frank A. Jaynes of the Rochester, N. Y., Fire Department, he specified it must be equipped with a Sterling No. 12 Siren, because he knew that it would clear his way through the thickest traffic . . . as thousands of other Sterlings are now doing the world over.

The inclosed high-speed, ball bearing motor, the balanced five inch fan and micrometer clearances insure perfect siren performance.

Try one and see for yourself. Complete with bracket, cord, and switch . . . $40.00 f.o.b. Rochester.

There is a Sterling to answer every siren requirement. Write for Bulletin 660.

STERLING SIREN FIRE ALARM CO., INC.
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Are made of strong, heavy duck and lapped seams and are designed of such thickness and weight as to be light enough to be handled quickly and rigid enough for the most strenuous service. They are rubberized on both sides with a double coating of a high grade, long life, rubber compound.
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1879 **1929**

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It's often necessary to move apparatus at a fire. Automobile traffic hates to be held up by a line of hose stretched across the right of way.

Why ruin your hose by driving over it? Or waste valuable time cutting off and disconnecting?

The Wausau Protector is a big time and money saver—easy to handle and carry. Order a set today, or write us for particulars.

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Builders of equipment to meet your requirements.
Specializing in Apparatus for Rural Fire Fighting.

BOYER FIRE APPARATUS COMPANY
Logansport, Indiana

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are in use throughout the country and giving unsurpassed service.

Every fire official should be fully acquainted with Morse equipment and have our catalog and other descriptive literature on file for ready reference whenever considering the purchase of new equipment.

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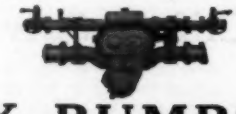

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FIRE APPARATUS

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For Personal Safety use

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4 Stainless steel pump shafts.

The design of Hale pumps has been perfected through fifteen years of active experience, and has resulted in a rugged, highly efficient product.

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CONSHOHOCKEN, PA.

Manufacturers of Rotary Fire Pumps.

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This page is here to make it *convenient* for you to get complete specifications and prices from *reliable* manufacturers of equipment needed for your department. It is *your* page to use freely without any obligation.

To get the information you want, just mail in the coupon below with your name and address and numbers that indicate the equipment listed below on which you would like descriptive literature.

We will then notify reliable manufacturers of your interest in such equipment and request that they send you complete information. They will gladly do this and it will be a pleasure for us to help you in this way. No charge whatever!

Fire Protection Equipment and Supplies

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59 Hose Jackets.
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6-26

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The quality of Pirsch fire fighting equipment is assured by more than seventy years of manufacturing experience. The Pirsch line is complete, chemical engines, ladder trucks, pumpers and Pirsch trussed fire ladders. Write.

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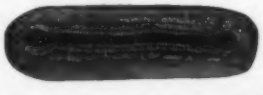

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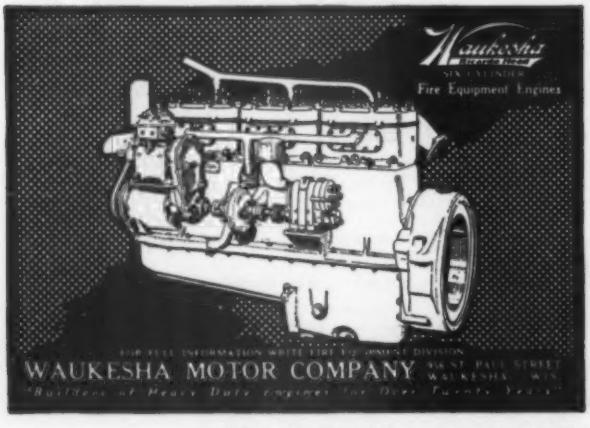

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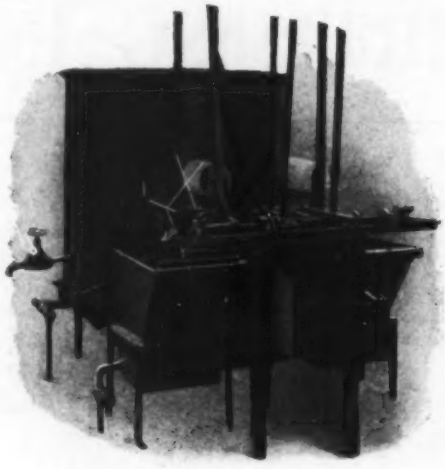
They are helping us make the paper better by their advertising. You can help them and help us and help yourself by giving them your business. Let's all pull together! All will benefit.

The Publishers



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Wax and Para Gum Treated Cotton Rubber Lined Fire Hose

OUR first process—that of treating cotton yarn with melted wax and Para gum. The "wax" is ozocerite and the "gum" is smoked latex from the rubber tree. This compound is kept in hot solution in the steam heated cylindrical tank of the TREATMENT MACHINES. The hose cord passes through this hot "treatment" and becoming thoroughly impregnated renders the fire hose fabric from which it is woven. MILDEW-PROOF, ROT-PROOF, PLIABLE, STRONG and DURABLE.

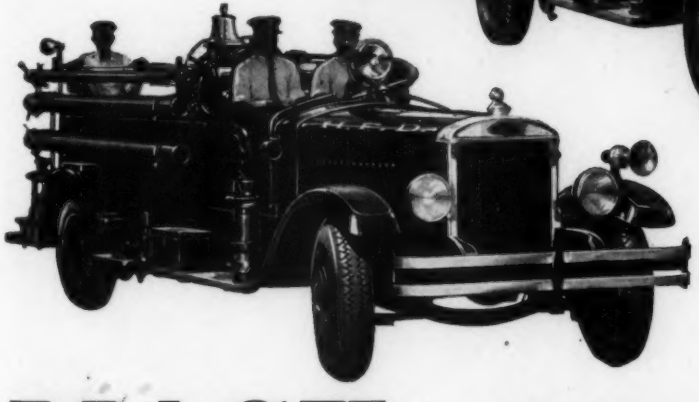
Fabric Fire Hose Co.

9 - 15 Park Place, New York, N. Y.

124-126 W. Lake Street, Chicago

Atlanta	Dallas	Minneapolis	Los Angeles
Boston	Binghamton	Portland	Newark
Columbus	Baltimore	San Francisco	Pittsburgh

Two Type Nineteen—one of 750 and one of 1000 gallon capacity—Mack Pressure Volume Pumpers, recently delivered to Hattiesburg, Miss. Hattiesburg is one of 244 municipalities now using Mack Fire Apparatus.



Why MACK PERFORMANCE *counts in* Fire Apparatus

Types of Mack fire-fighting equipment

Hose wagons
Chemical engines
Combination hose and chemical
Pumpers
Triple combinations—pump, hose, booster (chemical)
City Service hook and ladder trucks
Quadruple combinations—pump, ladders, hose, booster (chemical)
Tractors
Tractor-drawn aerial hook and ladder trucks
Squad cars

The operating advantages of Mack Fire Apparatus are numerous. You will find many of them in the Mack Pressure Volume Pump. Note a few of the points of superiority:

—Steady non-pulsating flow, at uniform pressure.

—A limited maximum or shut-off pressure.

—Ability to idle against closed discharge nozzles without damage to pump or hose.

—Takes full advantage of whatever pressure is flowing from the hydrant. Just that many pounds of work is taken off the driving member, thereby adding to the life of the whole apparatus. Hydrant pressure is utilized, not destroyed.

—When the discharge pressure is reduced the pump throws greatly increased quantities of water without change of speed.

—By the turn of a wheel and without shock to the apparatus, the capacity of the pump at rated pressure can be converted to one-half at double pressure.

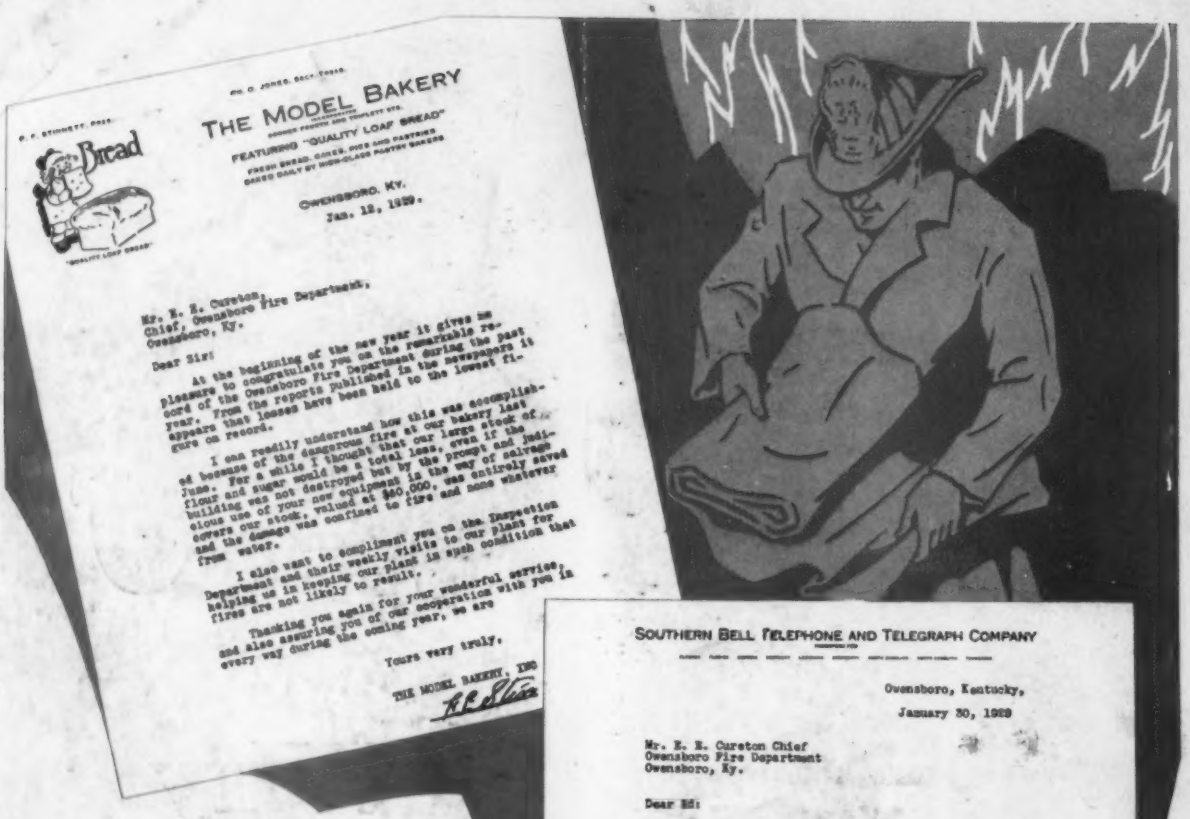
Be satisfied with nothing less than Mack performance.

Fire Engine Division
25 Broadway
New York, N. Y.

Mack Trucks, Inc.

More than 180 direct Mack Factory Branches are equipped to service Mack Fire Apparatus in any emergency.

TRUCKS · BUSES · FIRE APPARATUS · RAIL CARS · LOCOMOTIVES



THE MODEL BAKERY

FEATURING "QUALITY LOAD BREAD"

OWENSBORO, KY.

Jan. 12, 1929.

Mr. E. E. Cureton,
Chief, Owensboro Fire Department,
Owensboro, Ky.

Dear Sir:

At the beginning of the new year it gives me pleasure to congratulate you on the remarkable record of the Owensboro Fire Department during the past year. From the reports published in the newspapers it appears that losses have been held to the lowest figure on record.

I can readily understand how this was accomplished because of the dangerous fire at our bakery last June. For a while I thought that our large stock of flour and sugar would be a total loss, even if the building was not destroyed but by the prompt and judicious use of your new equipment in the way of salvage covers our stock, valued at $60,000, was entirely saved and the damage was confined to fire and none whatever from water.

I also want to compliment you on the Inspection Department and their weekly visits to our plant for helping us in keeping our plant in such condition that fires are not likely to result.

Thanking you again for your wonderful service and also assuring you of our cooperation with you in every way during the coming year, we are

Yours very truly,

THE MODEL BAKERY, INC.

SOUTHERN BELL TELEPHONE AND TELEGRAPH COMPANY

Owensboro, Kentucky,

January 30, 1929

Mr. E. E. Cureton Chief
Owensboro Fire Department
Owensboro, Ky.

Dear Sir:

Every day since the fire at my residence, I have been intending to write you a letter of appreciation, but first one thing, then another, has kept me from thinking of it when at the office.

When I stepped out on the side walk and looked up at the roof of my house, all covered with smoke and flames, there seemed to me very little chance to save the house, and of course I fully expected that whatever escaped the flames would be ruined by water.

I was therefore, very agreeably surprised when you and your efficient bunch of fellows came, in less than five minutes from the time I called you, and extinguished the fire before it burned into any of my upstairs rooms at all. It was also a revelation to me the way you covered my household goods with tarpaulins and prevented any water damage to my furniture.

Please accept my sincere appreciation, and pass it along to the Boys who fought with you so faithfully. Owensboro citizens as well as insurance companies doing business in the City, have in your organization an asset of incalculable value.

With very best wishes for your continued success, I am

Yours very truly

WEH:F

—*as these letters attest*

Shuredry covers are just as essential to the equipment of the up-to-date fire department as the hose wagon or other apparatus.

Prominent fire chiefs throughout the country endorse "Shuredry" covers as ideal for all salvage work.

They cost less, weigh less and are easier to handle and spread than rubber covers. They do not crack when folded and stored.

Write our nearest plant for samples and prices.

Fulton Bag & Cotton Mills

Brooklyn Dallas Atlanta, Ga. St. Louis Minneapolis
New Orleans Kan. City, Kan.

Manufacturers Since 1870

"Shuredry" Waterproofed Salvage Covers